Western Botanical

Detailed Flora and Vegetation Assessment of Threatened Ecological Communities of the Proposed Moorine Rock to Mount Holland Logistics Road Supporting Proposed Clearing Permit

Prepared for: Covalent Lithium Pty Ltd

Report Ref: WB1027



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Executive Summary

The Shire of Yilgarn is undertaking a road upgrade and maintenance works south and south-west of the townships of Southern Cross and Marvel Loch. This includes realignments and sealing of Stubbs Street and Parker Range Road south of Moorine Rock, the newly constructed Parker Range Road diversion around the Mt Caudan minesite and a section of the Marvel Loch to Forrestania Road from the Parker Range Road intersection to the Mt Holland minesite. The realignment, widening and sealing is required due to anticipated increase in traffic as a result of expanded mining operations within the area.

In late November 2021, Covalent Lithium Pty Ltd (Covalent) commissioned Western Botanical to conduct a Detailed Assessment of the flora and vegetation of the proposed road alignment upgrade from Moorine Rock to Mt Holland (hereafter referred to as the Study Area) meeting EPA Guidance 2016. As part of this, a desktop review, Western Botanical (2023a), was implemented to provide contextual information, particularly regarding flora and vegetation of conservation significance, prior to the completion of extensive floristic survey of the route.

The entire Study Area is approximately 113 km in length. In the area adjacent to freehold land (cleared agricultural land), the Study Area is narrow, commonly less than 2 m wide, and restricted to the road easement between fencelines either side of the road. In the area south of Cockatoo Tanks (Water Reserve 12369744) at approximately chainage 46 km, the vegetation has not been cleared for agricultural purposes and the Study Area extends to a 1 km wide alignment, 500m either side of the road alignment in areas of native vegetation. The Study Area lies entirely within the Shire of Yilgarn.

The Study Area lies within and on the border of the eastern portion of the Avon Wheatbelt and the western portion of the Coolgardie IBRA regions. It intersects the Merredin subregion (AVW-01) of the Avon Wheatbelt bioregion and the Southern Cross subregion (COO-02) of the Coolgardie bioregion.

This report specifically addresses the vegetation associations of the Study Area that meet the description of *Eucalypt woodlands of the WA Wheatbelt EPBC listed Threatened Ecological Community (TEC)*. These have been excised from previous reports prepared by Western Botanical in 2023 for three previously submitted Clearing Permit Applications CPS10197/1, CPS10266 and CPS10049/1, Western Botanical (2023b, c, and d respectively).

The TEC is inclusive of the following Priority Ecological Communities (PECs) where they lay within the Avon Wheatbelt IBRA region and where they lay outside the Great Western Woodlands:

- *Eucalypt woodlands of the Western Australian Wheatbelt Priority 3 Priority Ecological Community (PEC)*; and

- *Eucalyptus longicornis* woodland within the Avon Wheatbelt bioregion, "Red Morrel Woodland of the Wheatbelt" Priority 1 PEC, Critically Endangered.

Within the road alignment, the proposed road upgrade requires minor widening of some portions as well as realignment of some intersections. Proposed impacts to 0.4 ha of native vegetation representing *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC* are anticipated.

The central portion of the Study Area, from chainage 48.3 to 58.5 km (10.2 km, 9.02%) lies within the buffer of the *Plant Assemblages of the Parker Range System Priority 3 PEC*. A small proportion of this Study Area, from approximately chainage 102 km to 103 km (1 km, 0.88% of the Study Area), lies within the buffer of the *Ironcap Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill) (banded ironstone formation) Priority 3 PEC*.

In its northern portion, the road alignment traverses the southern part of the Wockallarry Nature Reserve from approximately chainage 20.6 to 23.1 km. At approximately chainage 84.5 km, traverses a small portion (~0.18 km) of the western edge of the Jilbadji Nature Reserve.

The southern 1.5 km of the road alignment has scattered individuals of the Threatened Flora species *Banksia dolichostyla* present outside the proposed disturbance footprint. These areas are regarded as Environmentally Sensitive Areas (ESAs).

In the northern and central portions, the Study Area variously intercepts tall eucalypt woodland vegetation, however, only a small area of this (0.40 ha) meets the description of the Federally listed *Woodlands of the Avon Wheatbelt TEC.*

Two eucalypt-dominated tall woodland vegetation associations matching the description of Federally listed *Woodlands of the Avon Wheatbelt TEC* are present within the Study Area. The majority of these occur in the central portion of the Study Area, south of the Agricultural zone and within the large remnant vegetation of the eastern Merredin IBRA subregion. Those laying outside the Great Western Woodlands are:

Vegetation Code	Vegetation Name	# of Patches	Condition	Area (ha)
E07	Eucalyptus capillosa mallee Woodland	1	Excellent	0.03
E07	Eucalyptus capillosa mallee Woodland	1	Pristine	0.10
E18	Eucalyptus salmonophloia, Eucalyptus aff. salubris Woodland over Acacia hemiteles, A. merrallii, Templetonia sulcata	2	Very Good	0.27
			Total	0.40

Despite significant design adjustments to minimise clearing, implementation of the road upgrade requires unavoidable impacts to 0.40 ha of vegetation that matches the description of *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.

Within the tall eucalypt woodland vegetation associations, some of which meet the description of the Federally listed *Woodlands of the Avon Wheatbelt TEC*, the following statistics are calculated:

Statistic	Number
Total number of species (including indeterminate species and sub-species, see below)	**167**
Mean Species Richness +/- Std Dev (range)	**14.4 +/- 6.5 (4 to 30)**
Number of Quadrats	**34**
Number of vegetation associations	**9**
Indeterminate specimens not identified to species level (including multiple duplicates of some genera)	**62**
Indeterminate specimens not identified to sub-species level	**4**

With regard to Significant flora, no species of listed Threatened Flora are known within or nearby the vegetation associations regarded as representing the TEC. Within the eucalypt woodland vegetation associations, some of which meet the description of the Federally listed Woodlands of the Avon Wheatbelt TEC, nine Priority Flora are known to occur. Two locally endemic new *Grevillea* species and one widespread newly recognised *Eucalyptus* species were also recorded.

Taxon	Taken -	Grand Total Known Locally (Regionally)	Taken %
Threatened			
NIL	Nil	Nil	Nil
Priority 1			
Eucalyptus sp. Dunbar Road (D. Nicolle & M. French DN 5466) [1]	8 (Incomplete Assessment)	2,796 Thousands, based on casual observation (not assessed regionally)	Likely greater than 0.002%
Grevillea lissopleura	86	5,514	1.56%
Priority 2			
Acacia asepala	103	24,901	0.41%
Acacia concolorans	3	4,708	0.06%
Eutaxia lasiocalyx	4	172,907	0.002%
Priority 3			
Eucalyptus polita subsp. ocreta	Present, (Incomplete Assessment)	566 (Incomplete Assessment)	Not calculated
Teucrium diabolicum	4	71,045	0.01%

[1] See Notes following Table 6.

Taxon	Taken -	Grand Total Known Locally (Regionally)	Taken %
Priority 4			
Eremophila caerulea subsp. merrallii	Nil	76	Nil
Species of Interest			
Eucalyptus aff. salubris pruinose branchlet form (G. Cockerton & J. Warden WB40196)	Present, Not assessed	1,661 minimum Tens of thousands known locally (A very widespread species)	Not calculated
Grevillea comosa ms (P.M. Olde 91/14, 7 Sep 1991)	Nil	18,486	Nil
Grevillea aff. huegelii Marvel Loch form (P.M. Olde 91/44) NSW782779	Nil	498	Nil

A tabulated Impact Assessment is provided for Priority flora and Species of Interest which occur within the Study Area. An assessment against the EPA's 10 Clearing Principles is also presented.

Information presented here is valid as at 29th February 2024.

Geoff Cockerton

1st March 2024.

1. Introduction

The Shire of Yilgarn is undertaking a road upgrade and maintenance works south and south-west of the townships of Southern Cross and Marvel Loch. This includes realignments and sealing of Stubbs Street and Parker Range Road south of Moorine Rock, the newly constructed Parker Range Road diversion around the Mt Caudan minesite and a section of the Marvel Loch to Forrestania Road from the Parker Range Road intersection to the Mt Holland minesite. The realignment, widening and sealing is required due to anticipated increase in traffic as a result of expanded mining operations within the area.

In late November 2021, Covalent Lithium Pty Ltd (Covalent) commissioned Western Botanical to conduct a Detailed Assessment of the flora and vegetation of the proposed road alignment upgrade from Moorine Rock to Mt Holland (hereafter referred to as the Study Area) meeting EPA Guidance 2016. As part of this, a desktop review was implemented to provide contextual information, particularly regarding flora and vegetation of conservation significance, prior to the completion of extensive floristic survey of the route.

Due to the complexity of the flora and vegetation, and to meet former reporting time lines, the Study Area was divided into three sections with three Clearing Permit Applications presented:

(i) Northern Section – from Moorine Rock to Fence Road (chainage 0.2 to 50.0 km), CPS10197/1;

(ii) Fence Rd to the Marvel Loch – Forrestania Road (chainage 50.0 to 63.0 km), CPS10265; and

(iii) Southern Section – the Marvel Loch – Forrestania Rd from chainage 63.0 to 113.0 km at the turnoff to the Mt Holland minesite, CPS10049/1.

Subsequently, the vegetation associations matching the description of the *Eucalypt woodlands of the WA Wheatbelt EPBC listed Threatened Ecological Community (TEC)* were excised from the above Clearing Permit Applications. These TEC areas are described within this report.

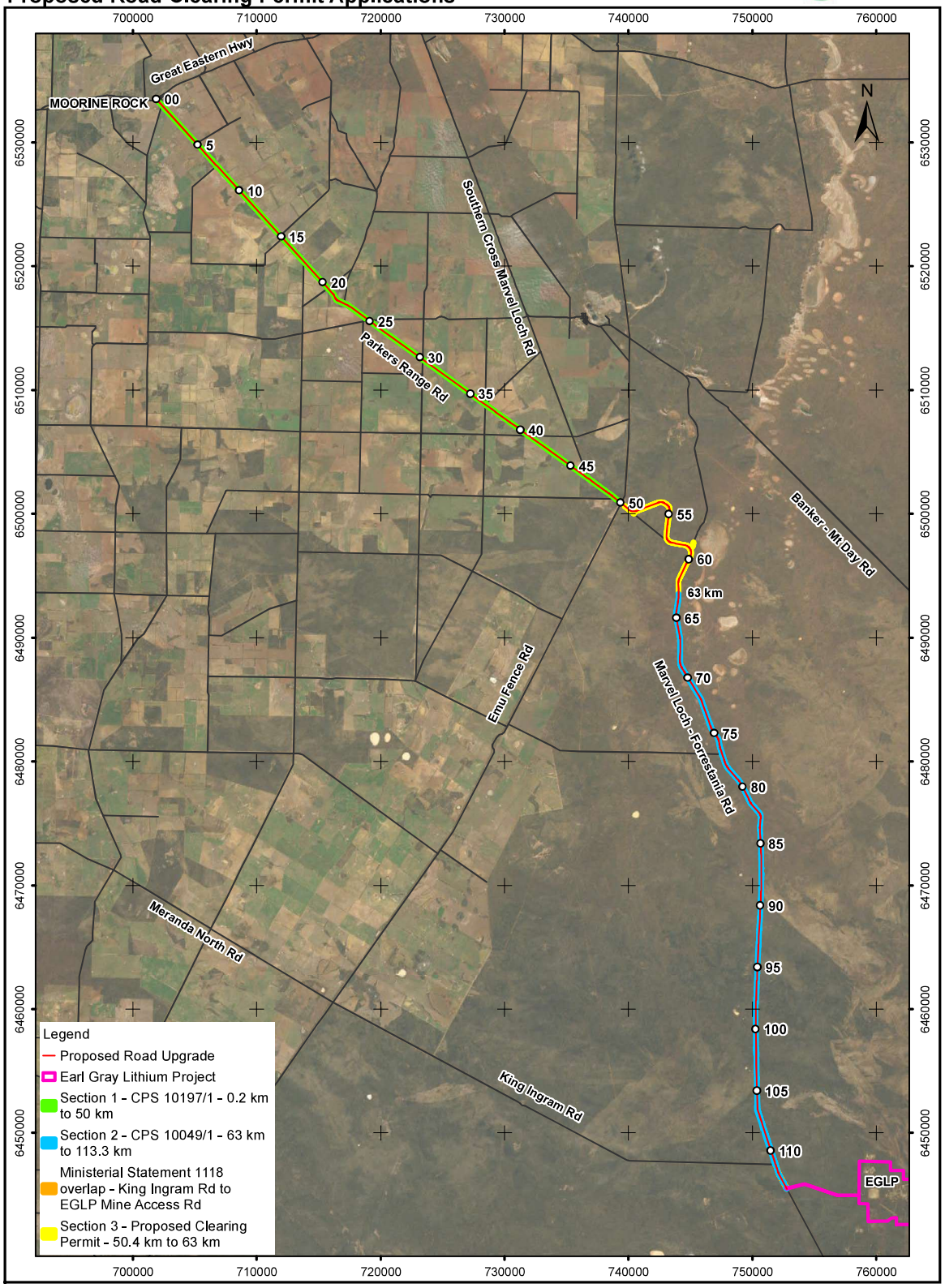
Clearing Permits and Sections of the Study Area are presented in Figure 1.

Areas representing proposed impacts to tall eucalypt dominated woodlands within the Study Area are presented in Figure 2.

Proposed impacts to vegetation associations matching the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC are presented in Figure 3.

Figure 1. Clearing Permits and Sections of the Study Area

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Proposed Road Clearing Permit Applications



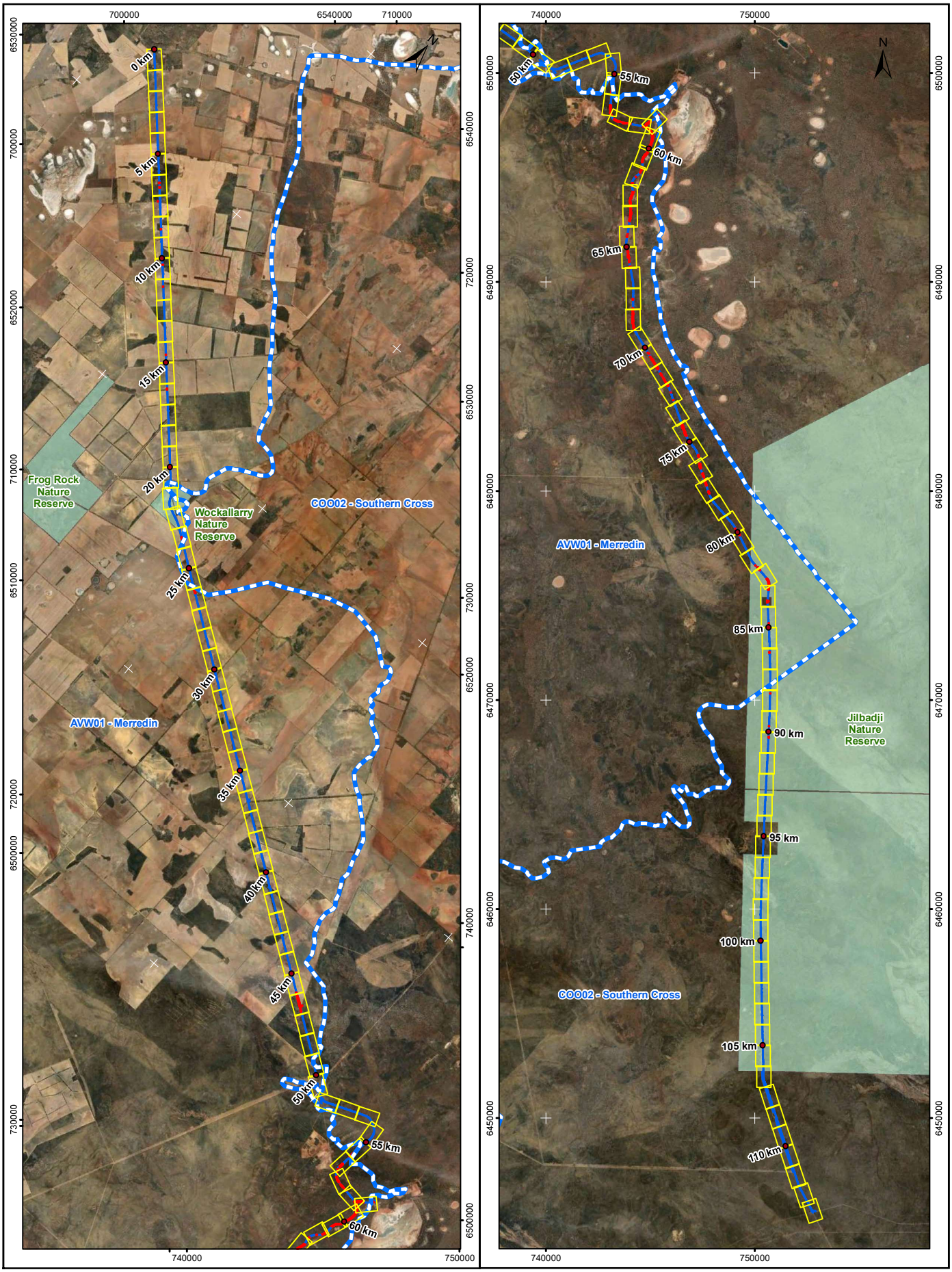
Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_01_01, Rev: A
Scale 400,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER

0 10 km

Figure 2. Proposed Impacts to Eucalypt Woodlands within the Study Area

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Sheet Layout



Drawn: CAD Resources (08 9246 3242), Date: Feb 2024
CAD Ref: a2765_MR_MTH_51_01, A3, Rev: A
Source: Image: ESRI

Legend
- 1km Sheet Layout
- Proposed Clearing Permit Boundary
- Proposed Road
- Biogeographic Region
- DBCA Legislated Land

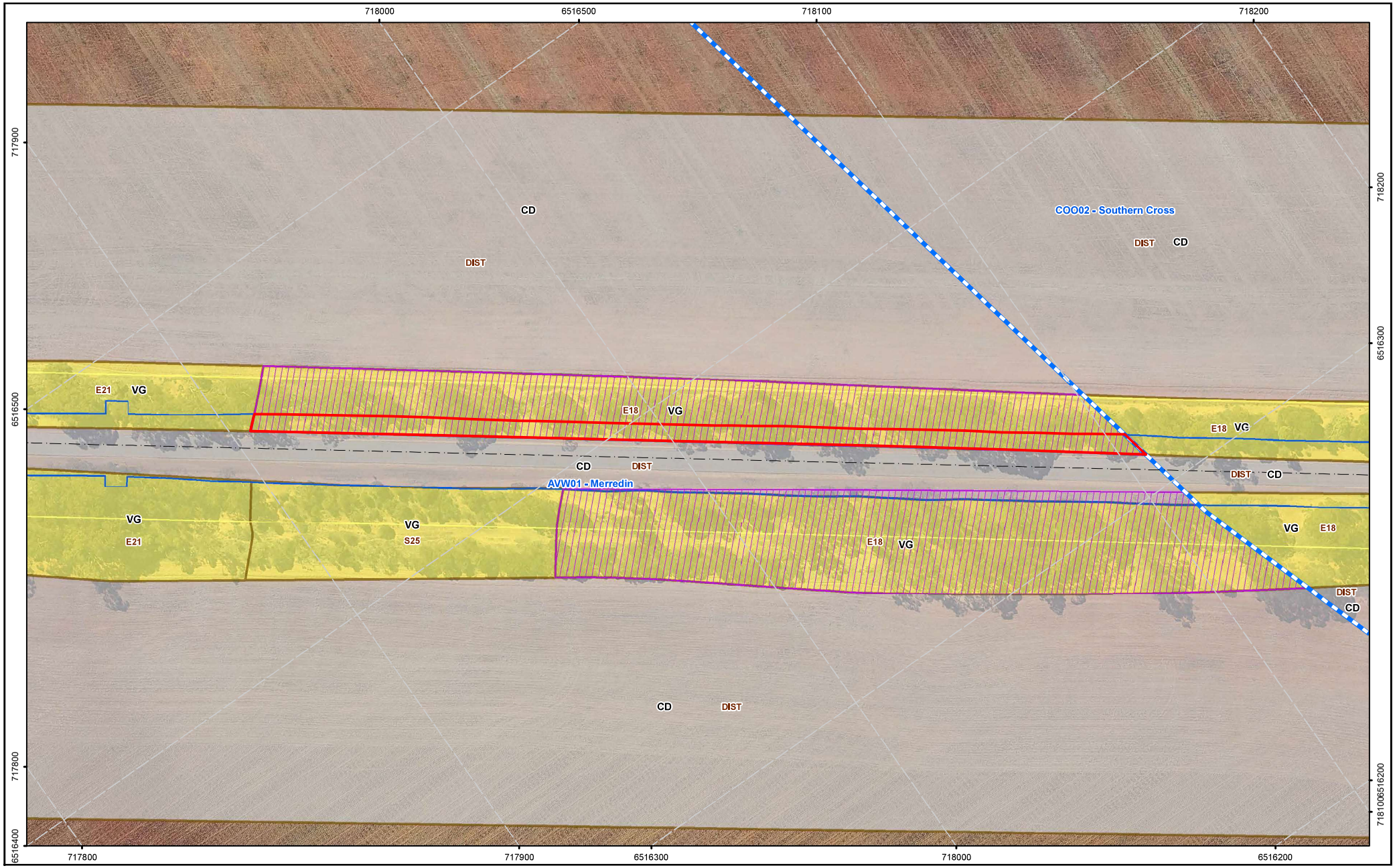
0 6km

Scale: 1:175,000
MGA94 (Zone 50)

Figure 3. Proposed Impacts to the Federally Listed Woodlands of the Avon Wheatbelt Threatened Ecological Community

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - TEC Clearing Footprint - Vegetation Condition - 23.5 km - 23.7 km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_04, A3, Rev: A
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

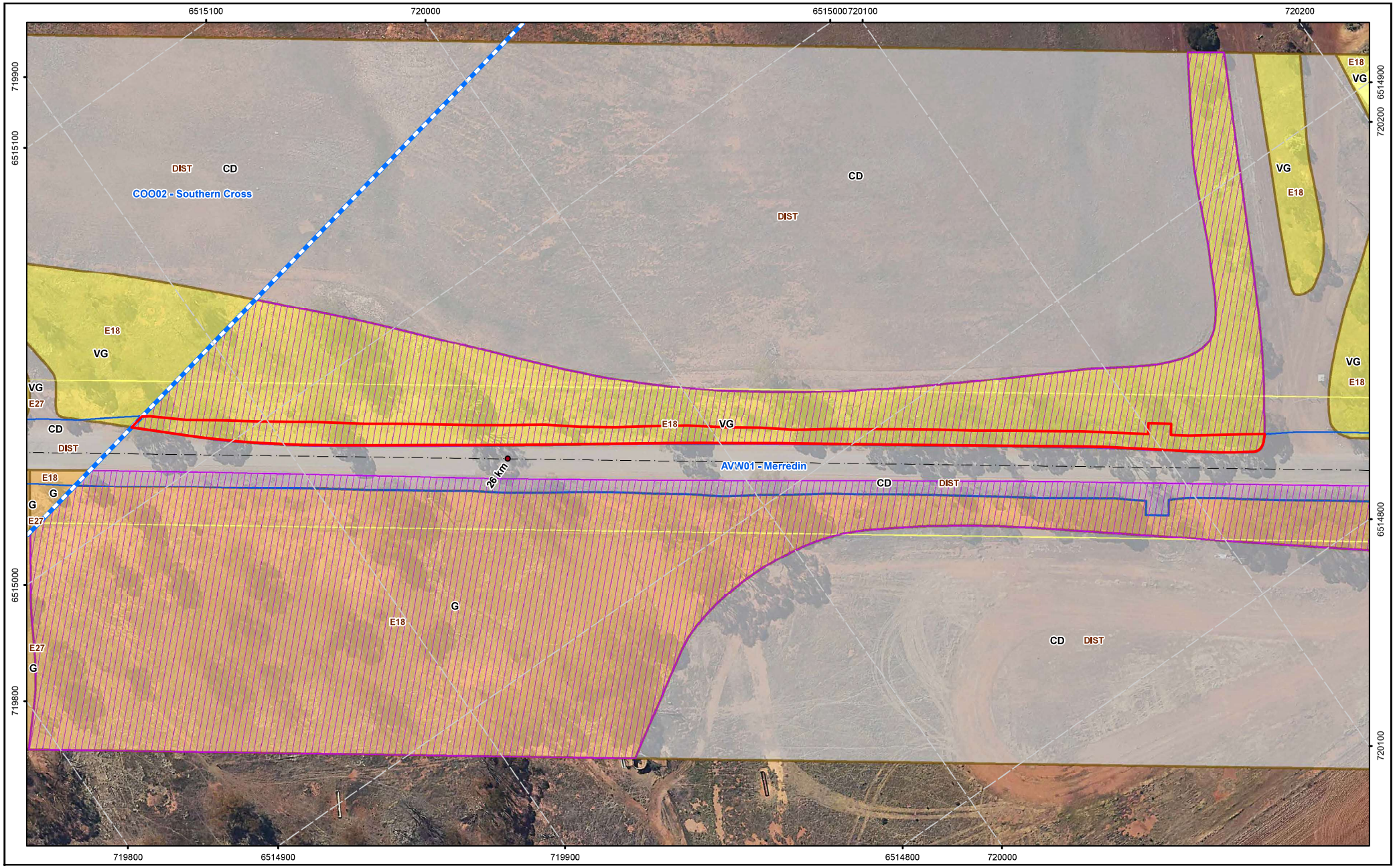
- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- TEC clearing footprint
- Cadastre
- VG - Very Good
- Biogeographic Region
- Vegetation Mapping Boundary
- Likely TEC

0 20m

Scale: 1:1,000
MGA94 (Zone 50)

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - TEC Clearing Footprint - Vegetation Condition - 25.9 km - 26.2 km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_04, A3, Rev: A
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- TEC clearing footprint
- Biogeographic Region
- Likely TEC
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- G - Good
- VG - Very Good
- Vegetation Mapping Boundary

0 20m

Scale: 1:1,000
MGA94 (Zone 50)

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - TEC Clearing Footprint - Vegetation Condition - 45.9 km - 46.5 km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_04, A3, Rev: A
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- TEC clearing footprint
- Cadastre
- Ex - Excellent
- Biogeographic Region
- Pr - Pristine
- Likely TEC
- Vegetation Mapping Boundary

0 40 m

Scale: 1:1,500
MGA94 (Zone 50)

1.1. Project Background

1.2. Previous surveys

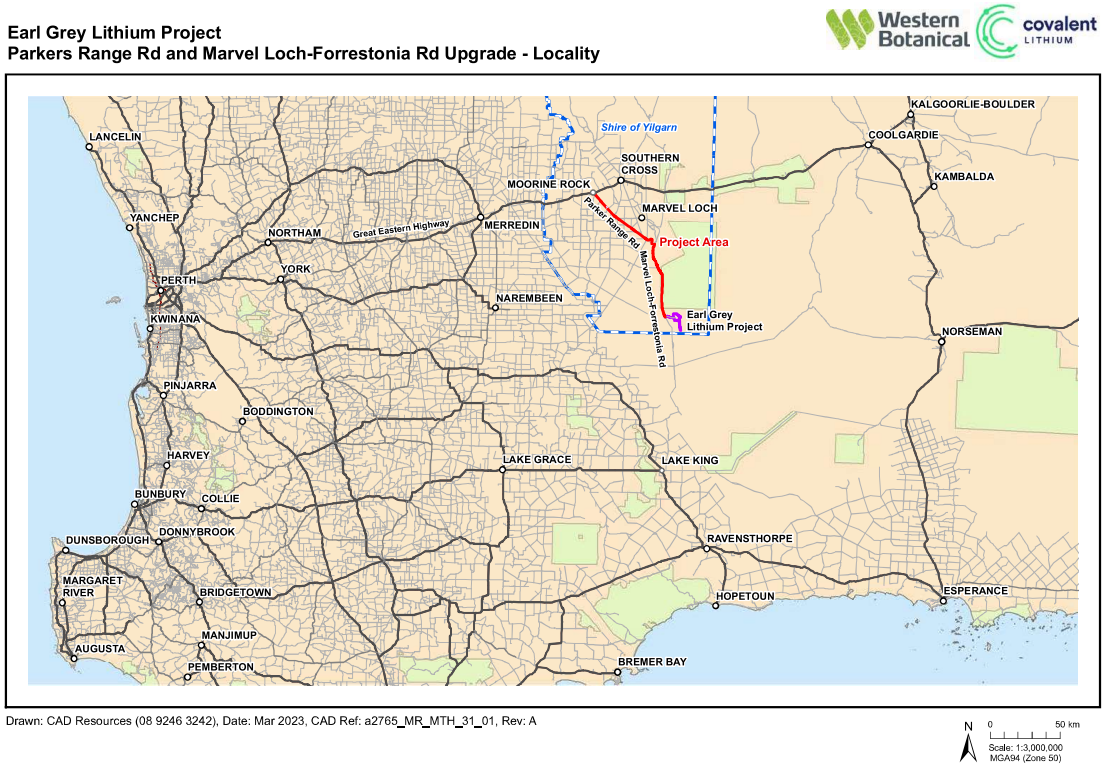
Numerous previous surveys have been conducted in the region by ecologists for Covalent and prior tenement holders at the Mt Holland site. Botanica Consulting (2010) previously assessed the recently built Mt Caudan Minesite Diversion Road for Cazaley Resources Ltd, a project now operated by Mineral Resources Ltd.

1.3. Current Survey

1.4. Site location map

The location of the overall Study Area, inclusive of northern, central and southern sections, is represented in Figure 4.

Figure 4. EGLP Logistics Road Study Area Location



1.5. Physical Environment

The physical environment of the Study Area is described in Western Botanical (2023a).

1.6. Biological Environment

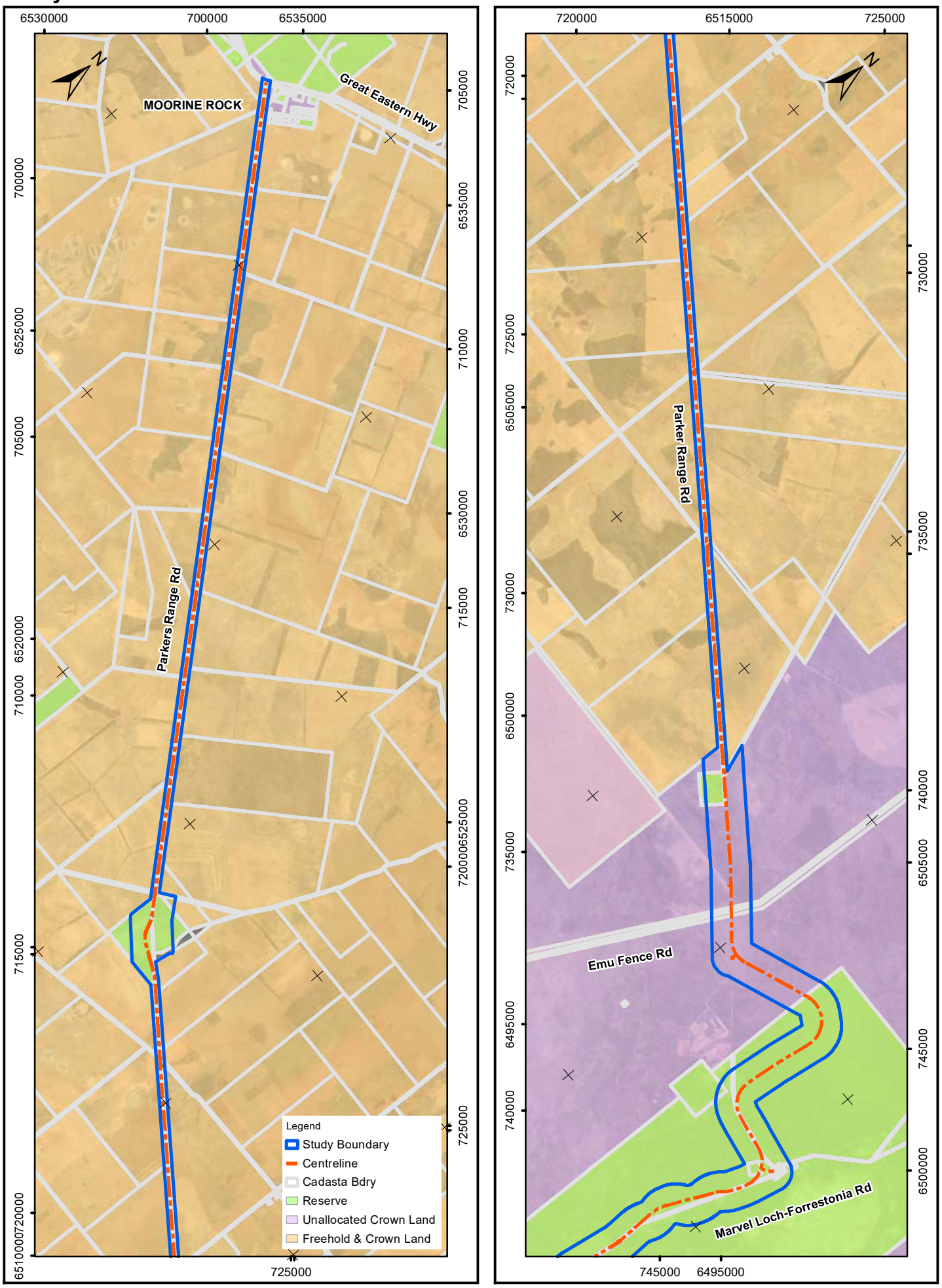
The biological environment of the Study Area is described in Western Botanical (2023a).

1.7. The Study Area

This report specifically and exclusively addresses vegetation associations following the road alignment between Moorine Rock and the Mt Holland minesite which match the description of *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*, Figure 2. Vegetation is described within the narrow (1 to 5m wide) road reserve to cadastral boundaries within the agricultural zone and to a corridor width of 500m either side of the road edge in the uncleared Unallocated Crown Land and within adjacent Nature Reserves.

Figure 5. Study Area Overview

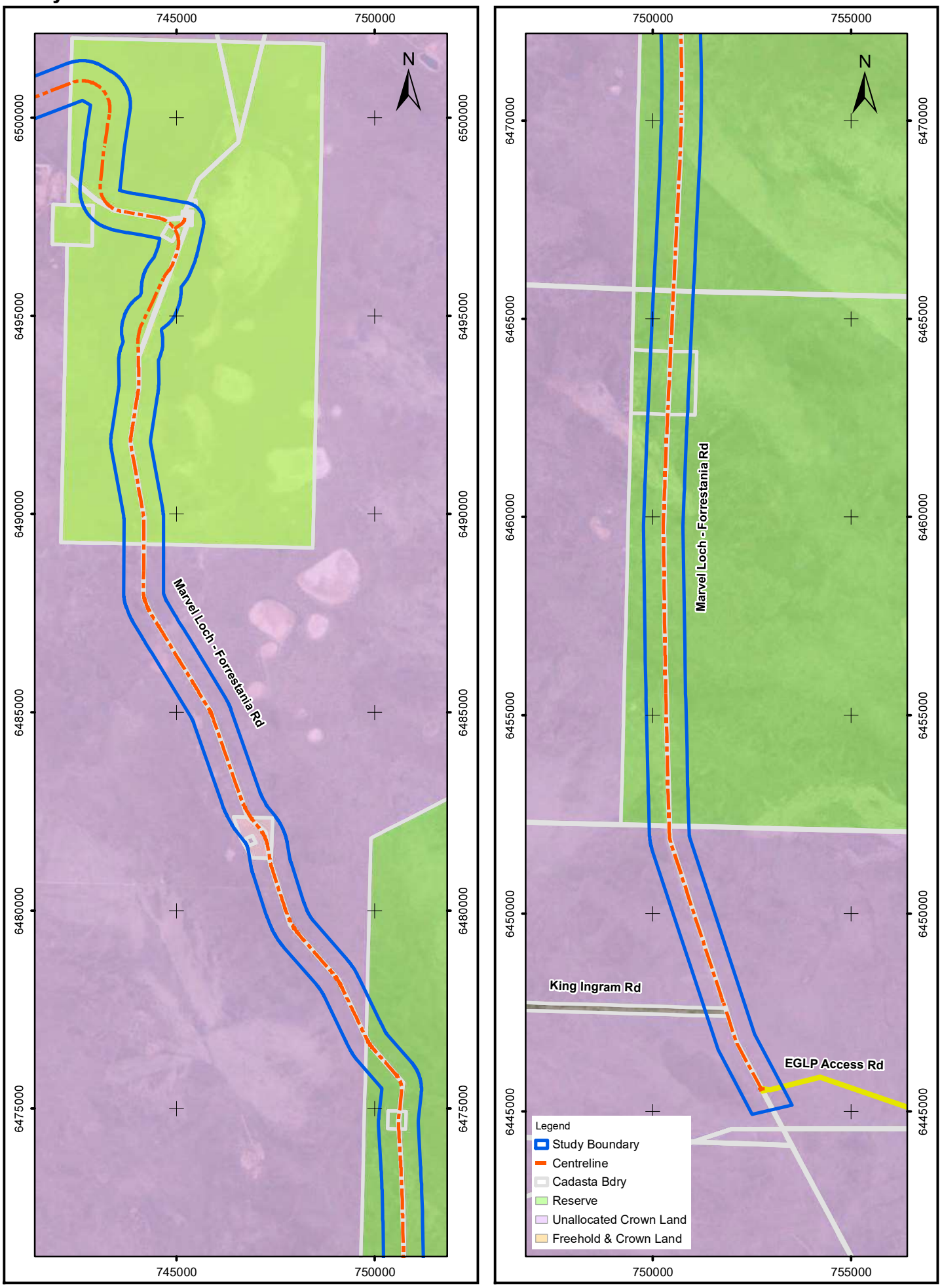
Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Study Area - Sheet 1 of 2



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_02_01, Rev: A
Scale 1:125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate

0 3km

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Study Area - Sheet 2 of 2



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_02_02, Rev: A
Scale 1125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate

2. Methods

The project was scoped as a Detailed Assessment following EPA Guidance (2016). The Study Area was centred on the road alignment and divided into two regions differing in survey intensity:

(i) High Intensity Survey conducted in a band of native vegetation from the existing road side and up to 50m either side of the road alignment (where this existed) termed the "Flora Detail" area where Vegetation Mapping with on-ground assessments was recorded, quadrats were established and where Targeted surveys for Significant Flora were conducted at high intensity – 10 m between operators walking in parallel.

(ii) Low Intensity Survey conducted in a contextual zone extending from 50 to 500m from the road alignment, termed the "Flora Inspection" area, where vegetation mapping was extrapolated, primarily utilising the high-resolution satellite imagery available with traverses and on-ground inspections where required.

2.1. Desktop Assessment

The Desktop Assessment presented in Western Botanical (2023a), Appendix 2, was prepared with data inclusive of the Department of Biodiversity and Attractions' (DBCA's) WA Herbarium (WAHERB) and Threatened and Priority Flora (TPFL) databases (04-0320FL, 21-1120FL and 23-1221FL); the Threatened and Priority Ecological Communities (TECs, PECs) databases (09_1221EC); and the Protected Matters Search Tool (PMST).

The Desktop Assessment was conducted without reference to the on-going findings of field surveys which were implemented contemporaneously.

2.2. Field Survey

Field Surveys for the Study Area were conducted per the Scope and in order to meet EPA Guidance (2016) requirements for assessments of linear infrastructure as follows:

Methods employed in assessing the entire Study Area were:

(i) Vegetation mapping to NVIS Level 5 Association, prepared on 1:10,000 scale hard copy colour satellite image maps in the field at 119 Releve sites and digitised for analysis and presentation with initial brief Vegetation Association descriptions entered into a Microsoft Excel® workbook on a laptop computer.

(ii) Vegetation Condition, utilising the scale presented in EPA (2016), was used to categorise the condition of vegetation within the 100m wide Detailed Study Area centred on the road alignment with vegetation associations extrapolated to an overall width of 1 km within the Contextual Study Area using hard copy satellite imagery and the digital images available on iPads.

(iii) Species profiles for vegetation associations were prepared using 139 Quadrats (20 x 20m) for understorey and expanded to 50 x 50m for upper storey and incorporating opportunistic collections within communities. As an initial target, one quadrat was established every 1 km along the alignment with contrasting quadrats being established in areas of similar vegetation association but of differing fire regimes. Data was reviewed and corrected based on final determinations following specimen identification.

(iv) Targeted Surveys for Significant Species, defined here as (a) species listed by the DBCA as Threatened (T) or Priority (P) Flora, and (b) any anomalous species that may represent new taxa, here-in referred to as Species of Interest (SOI). Records of all Significant Species were entered into an ARCGIS Field Maps® database on iPads managed by CAD Resources Pty Ltd. Targeted Surveys were undertaken at an average of 10m between individual operators utilising survey lines defined on iPads overlaid on high resolution aerial imagery. Data was reviewed and corrected based on final determinations following specimen identification.

(v) Targeted Survey timing was planned and implemented so that (i) large and readily recognised species were surveyed in a suitable season but which may not have included their flowering period and (ii) cryptic species were surveyed during their optimal flowering period which was usually early to mid-Spring for most smaller shrub species and in late Spring to early Summer for late flowering species such as *Chamelaucium*, *Rinzia* and *Verticordia* species. This meant return visits to some areas were necessary to capture all Significant Species known to occur within a particular landscape or soil type.

(vi) Multiple specimens of Significant Species were collected throughout the Study Area, particularly at locations that represented disjunct populations. Specimens were collected noting GPS coordinates with +/- 2.5m positional error and attributing a unique collector's number utilising a Fulcrum® database.

(vii) Records of Threatened Flora were revisited and captured utilising Differential GPS with an accuracy of +/- 10 cm by a Mt Holland minesite surveyor under direct supervision by a Senior Botanist.

(viii) All specimens collected, including those readily recognised in the field, were reviewed utilising the resources at the WA Herbarium's Reference Herbarium. Challenging specimens were resolved using the WA Herbarium's Research Collection. TYPE specimens were viewed utilising the JSTORE Plants website. Reference to third party specialist taxonomists was sought where required. All specimens of Significant Flora have been reviewed and supported by the WA Herbarium.

(ix) Specimens of all species encountered were retained for reference. A Field Herbarium of some 600 specimens of endemic species was prepared and updated on a fortnightly basis as required to assist in uniformity of species nomenclature in surveys. Priority flora and

SOI specimens were maintained commensurate with field survey progress and reference specimens of these were retained in the field during surveys for ready reference.

(x) Weed populations were recorded as point data indicating presence only. Numbers of weeds were not estimated. Larger populations of weeds were indicated using multiple points within and at extremes of occurrences.

(xi) At least one good specimen of each Priority Flora species and Species of Interest has been vouchered at the WA Herbarium for verification of identity and for taxonomic studies as required. Duplicates of specimens of novel taxa have been submitted to act as TYPE specimens where necessary.

Multiple field surveys on a fortnightly basis were undertaken to assess the alignment in its entirety. Survey Effort to 21 February 2023 has included:

(i) To date, 24 weeks of field survey with between 4 and 6 personnel per trip have been implemented over a period of 16 months, a total of approximately 840 man-days, consisting of:

a) Fifteen x seven-day field trips (each consisting of 2 days travel and 5 days on-ground survey) with between 4 to 6 personnel commenced 29th November 2021 and continued until 23rd August 2023 on a fortnightly basis. One field trip was not undertaken to allow specimen identification and processing early in the assessment.

b) A further nine x seven-day surveys field trip of the road alignment were re-commenced 26th September 2022 and continued to 21st February 2023.

(ii) Surveys were redirected to other areas (potential borrow pits) from 29th August to 18th September 2022, reported separately by Western Botanical.

2.3. Statistical Analysis

Statistical analysis of quadrat data was implemented utilising the PATN analysis package to verify vegetation association categorisation and homogeneity.

All data was entered into a proprietary Microsoft Access database (Griffin 2012). Statistical analyses were conducted to investigate floristic similarity amongst sites, groupings of sites, and to assess relationships amongst groupings.

Presence-absence (PA) data was assessed, in conjunction with percent foliar coverage (PFC), in order to incorporate dominance of key species within vegetation groupings. To optimise interpretive output, PFC's were standardised to cover values (CV) scaled from 0-6. The effects of including outs and Indet. species were examined during initial runs – the results guiding later iterations of the analysis.

Analysis of flora data was conducted using PATN v3.12 statistical package software (Belbin 2010). Association (Bray and Curtis), Classification (Flexible UPGMA Agglomerative Hierarchical Fusion), and Ordination (Semi-Strong Hybrid) components of PATN were utilised in the analysis; primarily producing a dendrogram of site similarity/dissimilarity with suggested Vegetation Association groupings provided by PATN.

3. Results and Discussion

3.1. Desktop Assessment

The results of the Desktop Assessment presented in Western Botanical (2023a), Appendix 2, are copied below:

- The Study Area intersects the Merredin subregion (AVW-01) of the Avon Wheatbelt bioregion and the Southern Cross subregion (COO-02) of the Coolgardie bioregion. Average annual rainfall is 292.8 mm with monthly rainfall peaking from late autumn throughout winter (BoM, 2023a).

- The Study Area is located across three regolith and seven bedrock geological units (DMIRS, 2018a; 2018b). The Study Area intersects 13 soil landscape zones (DPIRD, 2023a), which are dominated by the AC1 atlas system (~40% of the Study Area), DD15 atlas system (~19%) and the Ya28 atlas system (~15%).

- Groundwater salinities in the Study Area range predominantly from 14,000 mg/L to 35,000 mg/L (highly saline). Where the Study Area intersects paleochannels (associated with salt lakes) around the Moorine Rock townsite and a section extending approximately 7.8 km south along the Marvel Loch-Forrestania Road from the Parker Range Road intersection, groundwater salinity is >35,000 mg/L (brine) (DWER, 2023a).

- The Study Area is located across two hydrological zones; Northern Zone of Ancient Drainage and Southern Cross Zone (majority of Study Area). It is located entirely within the Avon River Basin in the Swan Avon/Yilgarn hydrographic catchment and traverses the Lake Julia (northern end of Study Area), Yellowdine (mid-section) and Lake Eva (southern end) hydrographic sub-catchments (DPIRD, 2023b).

- Thirteen pre-European vegetation system associations occur across the Study Area (where vegetation remains) with the majority pertaining to eucalypt woodlands or mallee. The dominant pre-European vegetation associations include Parker_1068 (41% of the Study Area vegetation), Skeleton Rock_519 (11%) and Skeleton Rock_1068 (8%).

- The majority of the Study Area has been mapped as having a low to moderate potential for supporting a terrestrial GDE. The northern end of the Study Area (1 km section at the junction with Great Eastern Highway) is mapped as having a high potential where vegetation remains intact surrounding the Moorine Rock townsite and the granite outcrop located on the northern side of Great Eastern Highway (BoM, 2023b).

- The nearest significant wetland, as listed under the Directory of Important Wetlands in Australia (DBCA, 2023b) is Lake Cronin, located approximately 32 km south of the Study Area.

- The Study Area intersects three ESAs: (i) Jilbadji Nature Reserve which is listed on the Register of the National Estate; and (ii) Marvel Loch – Forrestania road, roadside vegetation supporting *Banksia dolichostyla* (T) between the intersection of King Ingram Road and the turnoff to the minesite; and (iii) the Commonwealth listed 'Eucalypt Woodland of the Western Australian Wheatbelt' TEC under the *EPBC Act* (which is synonymous with the State listed PEC of the same name).

- Database searches (state and national) and the literature review indicate 126 flora taxa of conservation significance have been recorded (or may occur) within a 50 km radius of the Study Area. A total of 20 taxa of conservation significance (one Threatened, five Priority 1, four Priority 2, nine Priority 3 and one Priority 4) have been recorded within the boundary of the Study Area with an additional 66 taxa (three Threatened, 24 Priority 1, eight Priority 2, 20 Priority 3 and 11 Priority 4) assessed as having the potential to occur within the Study Area.

- The Study Area intersects the mapped buffer zones of three ecological communities of conservation significance (DBCA, 2022d);
    - '*Ironcap Hills vegetation assemblages (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill) (banded ironstone formation)' PEC (Priority 3);*
    - '*Plant Assemblages of the Parker Range System' PEC (Priority 3);* and
    - '*Eucalypt Woodland of the Western Australian Wheatbelt' PEC (Priority 3).* This PEC is synonymous with the Commonwealth listed TEC (of the same name) under the *EPBC Act*.

  The 'Granite outcrop pools with endemic aquatic fauna' PEC (Priority 3) is located within the Frog Rock Nature Reserve, approximately 2.7 km from the Study Area. This may also occur on the granite outcrop at the Wockallarry Nature Reserve, and on the granite outcrop north of King Ingram Road, within the Study Area.

- The Study Area is located within the western boundary of the Great Western Woodlands until it enters the extensively cleared agricultural zone along Parker Range Road.

- Within the Shire of Yilgarn there are 48 flora taxa listed as Declared Pests, including 29 taxa which are listed as Weeds of National Significance (DAWE, 2023b). The literature review of botanical surveys conducted in the area indicated no Declared Pests or WoNS to have been recorded.

3.2. Field Survey

3.2.1. Landforms

The landforms of the vegetation associations matching the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC within and adjacent to the Moorine Rock to Mt Holland road alignment include:

- Broad extensive loamy plains;
- Broad extensive sandy loamy plains with calcrete nodules;
- Small, isolated, low lateritic plateaux and associated kaolinitic clay slopes; and
- Small non-saline clay-based depressions which could be inundated for short periods following heavy rainfall.

These landforms are characteristic of broad valley floors of the Merredin sub-region of the Avon Wheatbelt and the Southern Cross subregion of the western Coolgardie biogeographic regions.

3.2.2. Vegetation Structural Units

Vegetation associations matching the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC within and adjacent to the Moorine Rock to Mt Holland road alignment fall into two vegetation structural groups, Table 1.

Table 1. ***Vegetation Super-groups***

Vegetation Super-Group	Included Vegetation Group
Tall Eucalypt Woodland	Tall Eucalypt Woodland Includes Salmon Gum, Gimlet and Red Morrel Woodlands
Mallee Shrubland	Mallee Shrubland * *Eucalyptus capillosa* is noted as a TEC indicator species, however, can grow as a mallee following fire.

These structural groups are general in nature, are commonly encountered but have been extensively cleared for agriculture in the Merredin and Southern Cross IBRA sub-regions. Most

contain sub-units with varying and strongly contrasting species composition which are recognised at NVIS Level 5 *Association* in our treatment of vegetation of the Study Area.

3.2.3. Definition of Threatened Ecological Community

The TEC definition as presented in the Approved conservation advice – Eucalypt Woodlands of the Western Australian Wheatbelt (Department of Environment, 2015), incorporates tall eucalypt woodlands with nominated tree and mallet (single-trunked) species as a dominant component of the upper stratum, minimum tree canopy is 10%, with a minimum patch size of 2 to 5 ha and in relatively good condition with mid and understorey intact and occurring within the intensively managed agricultural zone within the Avon Wheatbelt IBRA biogeographic region. It excludes similar or identical woodlands in the Coolgardie IBRA biogeographic region adjacent to the east. It also excludes communities where mallee growth forms are the dominant upper storey and those eucalypt communities associated with granite outcrops, lateritic gravely hills and other rocky rises.

Within the EPBC Act Conservation Advice for the Eucalypt Woodlands of the WA Wheatbelt (DoE, 2015):

- Defining characteristics are well described, though some taxonomic changes could be applied in some cases amending some species names.
    - Nominated species we have within the road alignment Study Area include *Eucalyptus capillosa, E. longicornis, E. myriadena, E. salmonophloia*, *E. salubris* (incorporating the newly recognised *E.* aff. *salubris* glaucous branchlet form (WB40196)), Table 2A, p 13.
- Exclusions are broadly defined and include:
    - woodlands in the Coolgardie IBRA biogeographic region adjacent;
    - communities where mallee growth forms are the dominant upper storey;
    - those eucalypt communities associated with granite outcrops, lateritic gravely hills and other rocky rises; and
    - woodlands within the Avon Wheatbelt IBRA region but outside the intensively farmed and extensively cleared agricultural areas. These woodlands are nominated as occurring within the Great Western Woodlands and are not part of the TEC.

The road alignment Study Area from Moorine Rock to Mt Holland traverses the Coolgardie and Avon Wheatbelt IBRA biogeographic regions. Within this:

1. Scattered remnant tall eucalypts with a totally cleared understorey within the Avon Wheatbelt IBRA region which are prevalent from Moorine Rock, southward to

approximately chainage 5.0 km, would be excluded from the TEC due to the understorey being absent.

2. Remnant tall eucalypts meeting the species-criteria for the TEC south of approximately chainage 5 km to chainage 50.0 km at Fence Road (west of the Parker Range) and within the Avon Wheatbelt IBRA region, but outside the Great Western Woodlands, and with understorey in either Category A (Very Good, Excellent, Pristine Condition), or Category B (Good), would meet the criteria for the TEC where:

    i. the road side vegetation width is equal to or greater than 5m wide; or

    ii. adjacent vegetation is contiguous with the roadside vegetation and patch size is a minimum 2 ha.

3. Vegetation would be excluded from the TEC where the patch size is:

    i. less than the minimum specified 5m width of road side remnants; or

    ii. incorporating adjacent vegetation is less than 2 ha;

4. From chainage 50.0 km to chainage 88.0 km, this area lies outside the extensively cleared agricultural area and falls within the Great Western Woodlands. Here the Study Area lies within the Avon Wheatbelt IBRA region, tall eucalypts meeting the species-criteria for the TEC are present (a majority of this section), the understorey is in Excellent to Pristine Condition and minimum patch sizes are met. However, as this lies outside the extensively cleared agricultural area and falls within the Great Western Woodlands, I interpret that tall eucalypt communities in this area would be excluded from the TEC

Point 3 above, focusing on width of appropriate vegetation units between chainage 5.0 km to chainage 50.0 km, needs assessment in the field to determine minimum criteria meeting or excluding these from the TEC.

3.2.4. Vegetation Associations

Vegetation associations within and adjacent to the Moorine Rock to Mt Holland road alignment which support tall eucalyptus species are presented in

Table 2Table 2. Those which match the description of *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC* lie within the Avon Wheatbelt but lay outside the Great Western Woodlands. Table 2 includes annotations of soil type and the number of quadrats that have been established per vegetation association.

Table 2. Vegetation Associations matching the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC within the Moorine Rock to Mt Holland minesite.

Vegetation Code	Vegetation Name	Soil Type and landforms	# of Quadrats	? TEC
E07	Eucalyptus capillosa mallee Woodland	weathered lateritic pizolitic gravel, saprolite hills	1	Some
E16	Eucalyptus longicornis, E. salmonophloia occasional Eucalyptus aff. salubris, Eucalyptus sp. Dunbar Road P1, tall Woodland over Melaleuca pauperiflora subsp. fastigiata, M. lanceolata 'subsp. thaeroides'	red-brown loam with calcrete nodules on gently inclined plains and valley floors	8	No (outside GWW)
E18	Eucalyptus salmonophloia, Eucalyptus aff. salubris Woodland over Acacia hemiteles, A. merrallii, Templetonia sulcata	red-brown sandy clay on gently inclined plains and valley floors	11	Some
E36	Eucalyptus aff. salubris Woodland over Melaleuca spp. tall Shrubs	dark red-brown clay on gently inclined plains and valley floors	1	(outside GWW)
E37	Eucalyptus longicornis, E. extensa, E. polita subsp. ocreta Woodland	red-brown loam with calcrete nodules on gently inclined lower slopes of the Parker Range	3	(outside GWW)
E38	Eucalyptus aff. salubris, Eucalyptus sp. Dunbar Road P1, occasional E. calycogona subsp. calycogona mallee Woodland over Melaleuca pauperiflora subsp. fastigiata tall shrubs over Templetonia sulcata, Acacia asepala P2, Atriplex bunburyana low Shrubs	red-brown loam with calcrete nodules on gently inclined plains and valley floors	4	(outside GWW)
E39	Eucalyptus aff. salubris, E. longicornis tall Woodland, over Tecticornia disarticulata Shrubs	saline red-brown sandy clay on gently inclined plains adjacent to salt lakes	1	(outside GWW)
E40	Eucalyptus aff. salubris, occasional E. sheathiana, E. polita subsp. ocreta 3 tall Woodland over Melaleuca spp. tall Shrubland	red-brown sandy clay on gently inclined plains and valley floors	4	(outside GWW)

Vegetation Code	Vegetation Name	Soil Type and landforms	# of Quadrats	? TEC
E47	Eucalyptus capillosa mallee woodland over Allocasuarina acutivalvis tall Shrubs over Hibbertia eatoniae 0.4m, Grevillea lissopleura P1 low Shrubs	lateritic pizolitic gravel and ferricrete on low hills	1	(outside GWW)

Note: The quadrats established in 2021-22 have only been assessed once, at establishment, in summer, and require a Spring assessment to capture all flora and to reconcile indeterminate (Indet.) specimens collected.

Vegetation Association maps of the road alignment are presented in Appendix 5.

A species vs sites table for vegetation associations matching the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC within the Study Area is presented in

Table 3.

Table 3. Species vs Sites for vegetation associations supporting tall Eucalyptus woodlands, some of which match the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC within the Study Area.

	Vegetation Code			E07	E16	E16	E16	E16	E16	E16	E16	E16	E18	E18	E18	E18	E18	E18	E18	E18	E18	E18	E18	E36	E37	E37	E37	E38
				Eucalyptus capillosa mallee Woodland	Eucalyptus longicornis, E. salmonophloia Woodland occasional Eucalyptus aff. salubris, Eucalyptus sp. Dunbar Road P1, tall woodland over Melaleuca pauperiflora subsp. fastigiata, M. lanceolata 'subsp. thaeroides'									Eucalyptus salmonophloia, Eucalyptus aff. salubris Woodland over Acacia hemiteles, A. merrallii, Templetonia sulcata												Eucalyptus aff. salubris over Melaleuca spp. Woodland	Eucalyptus longicornis, E. extensa, E. polita, tall Woodland			Eucalyptus aff. s E. calycogona pauperiflora su
	Vegetation Condition			Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Very Good	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine
	Likely TEC			TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC
	Quadrat Name			**MH067**	**MH024**	**MH044**	**MH049**	**MH054**	**MH056**	**MH057**	**MH100**	**MH113**	**MH022**	**MH042**	**MH043**	**MH045**	**MH051**	**MH061**	**MH104**	**MH110**	**MH111**	**MH112**	**MH121**	**MH065**	**MH058**	**MH127**	**MH129**	**MH046**
Chenopodiaceae	Atriplex ?bunburyana		INDET								3.0																	
Chenopodiaceae	Atriplex acutibractea subsp. karoniensis														0.1									0.0				
Chenopodiaceae	Atriplex vesicaria									6.0								0.1										
Fabaceae	Acacia acuminata			0.0																								
Fabaceae	Acacia assimilis		Indet subsp.																	0.0		0.0						
Fabaceae	Acacia hemiteles			0.0																								
Fabaceae	Eutaxia lasiocalyx						0.1																					
Loranthaceae	Amyema miquelii														0.1												0.1	
Myrtaceae	Eucalyptus protensa																								2.0	3.0		
Myrtaceae	Eucalyptus aff. cylindrocarpa		INDET											10.0										10.0				
Myrtaceae	Eucalyptus calycogona subsp. calycogona														0.0		9.0											
Myrtaceae	Eucalyptus sp. Dunbar Road (D. Nicolle & M. French DN 5466)	P1					3.0																					
Myrtaceae	Eucalyptus sp. indet (thick dark satin green leaves)		INDET																									
Myrtaceae	Melaleuca sheathiana																					1.0						
Plantaginaceae	Plantago hispida														0.1													
Proteaceae	Grevillea huegelii			0.0									0.5															
Scrophulariaceae	Eremophila decipiens				0.1																0.1							
Scrophulariaceae	Eremophila drummondii																					0.2						0.1
Zygophyllaceae	Roepera glauca														0.1			0.1										
Amaranthaceae	Ptilotus exaltatus						0.1																					
Amaranthaceae	Ptilotus polystachyus																			0.1								
Asparagaceae	Chamaexeros fimbriata												0.1															
Asparagaceae	Thysanotus sp. indet 1		INDET												0.1													
Asparagaceae	Thysanotus sp. indet 2		INDET																									
Asparagaceae	Thysanotus sp. indet 5		INDET																		0.1							
Asparagaceae	Thysanotus sp. indet 6		INDET																									
Asteraceae	Asteraceae sp. indet (daisy plumose)		INDET												0.1													
Asteraceae	Asteraceae sp. indet 1		INDET										0.1															
Asteraceae	Asteraceae sp. indet 3		INDET																		0.1							
Asteraceae	Asteraceae sp. indet 4		INDET																									
Asteraceae	Asteraceae sp. indet 5		INDET																									
Asteraceae	Olearia ?sp. Eremicola (Diels & Pritzel s.n. PERTH 00449628)		INDET																					0.0				
Asteraceae	Olearia magniflora														0.1													
Asteraceae	Olearia sp. Eremicola (Diels & Pritzel s.n. PERTH 00449628)																				0.1							
Asteraceae	Pogonolepis ?muelleriana		INDET												0.1													
Asteraceae	Senecio ?glossanthus		INDET																									
Boraginaceae	?Halgania andromedifolia		INDET																									
Brassicaceae	Brassica tournefortii	W																										
Brassicaceae	Brassicaceae sp. indet		INDET												0.1													
Casuarinaceae	Allocasuarina acutivalvis subsp. acutivalvis			1.0																								
Casuarinaceae	Allocasuarina helmsii																											1.0
Casuarinaceae	Allocasuarina sp. indet		INDET																									
Chenopodiaceae	Atriplex sp. indet																											
Chenopodiaceae	Chenopodiaceae sp. indet		INDET																									
Chenopodiaceae	Maireana sp. indet		INDET																						0.0			
Chenopodiaceae	Maireana trichoptera																											

	Vegetation Code			E07	E16	E16	E16	E16	E16	E16	E16	E16	E18	E18	E18	E18	E18	E18	E18	E18	E18	E18	E18	E36	E37	E37	E37	E38
				Eucalyptus capillosa mallee Woodland	Eucalyptus longicornis, E. salmonophloia Woodland occasional Eucalyptus aff. salubris, Eucalyptus sp. Dunbar Road P1, tall woodland over Melaleuca pauperiflora subsp. fastigiata, M. lanceolata 'subsp. thaeroides'									Eucalyptus salmonophloia, Eucalyptus aff. salubris Woodland over Acacia hemiteles, A. merrallii, Templetonia sulcata												Eucalyptus aff. salubris over Melaleuca spp. Woodland	Eucalyptus longicornis, E. extensa, E. polita, tall Woodland			Eucalyptus aff. s E. calycogona pauperiflora su
	Vegetation Condition			Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Very Good	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine
	Likely TEC			TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC
	Quadrat Name			**MH067**	**MH024**	**MH044**	**MH049**	**MH054**	**MH056**	**MH057**	**MH100**	**MH113**	**MH022**	**MH042**	**MH043**	**MH045**	**MH051**	**MH061**	**MH104**	**MH110**	**MH111**	**MH112**	**MH121**	**MH065**	**MH058**	**MH127**	**MH129**	**MH046**
Chenopodiaceae	Rhagodia sp. Watheroo (R.J. Cranfield & P.J. Spencer 8183)																				0.1							
Chenopodiaceae	Sclerolaena drummondii														0.1													
Chenopodiaceae	Sclerolaena sp. indet		INDET																					0.1				
Chenopodiaceae	Tecticornia sp. indet		INDET						1.5																			
Cupressaceae	Callitris verrucosa																	0.0										
Cyperaceae	Lepidosperma sanguinolentum																											
Euphorbiaceae	Beyeria sulcata subsp. brevipes																											
Fabaceae	Acacia ?acuminata		INDET																									0.1
Fabaceae	Acacia camptoclada																											
Fabaceae	Acacia deficiens																											0.0
Fabaceae	Acacia nyssophylla											0.1																
Fabaceae	Daviesia sp. indet		INDET																									
Fabaceae	Senna cardiosperma																											
Goodeniaceae	?Goodeniaceae sp.		INDET												0.1													
Hemerocallidaceae	Dianella revoluta var. divaricata			0.1																								
Lamiaceae	Westringia cephalantha var. cephalantha																											
Lamiaceae	Westringia rigida																			0.1								
Loranthaceae	Amyema sp. indet		INDET														0.1											
Myrtaceae	Eucalyptus aequioperta								7.0																			
Myrtaceae	Eucalyptus calycogona subsp miraculum	P1																				10.0						
Myrtaceae	Eucalyptus capillosa			7.0																								
Myrtaceae	Eucalyptus cylindrocarpa																											3.0
Myrtaceae	Eucalyptus gracilis																											4.0
Myrtaceae	Eucalyptus oleosa subsp. oleosa																				4.0							
Myrtaceae	Eucalyptus phenax subsp. phenax																											
Myrtaceae	Eucalyptus sp. indet (fine leaf)		INDET																									
Myrtaceae	Eucalyptus sp. indet (mallee, glossy pale green leaves)		INDET																	0.0								
Myrtaceae	Eucalyptus sp. indet (rough stocking to 2-3 m)		INDET																						1.0			
Myrtaceae	Eucalyptus sp. indet (wide dull blue green leaves, red margin and stems)		INDET																	5.0								
Myrtaceae	Eucalyptus sp. indet 1		INDET									0.1																
Myrtaceae	Eucalyptus tephroclada			12.0																								
Myrtaceae	Melaleuca scalena																											0.5
Myrtaceae	Melaleuca sp. indet (fine leaf lime green)		INDET																									
Myrtaceae	Melaleuca sp. indet 1		INDET																		0.1							
Poaceae	?Eriachne sp. indet		INDET																								0.1	
Poaceae	Amphipogon caricinus var. caricinus			0.1																								
Poaceae	Austrostipa ?pychnostachya		INDET											0.1														
Poaceae	Austrostipa drummondii												0.1															
Poaceae	Austrostipa hemipogon																											0.1
Poaceae	Austrostipa platychaeta																				0.1							
Poaceae	Austrostipa sp. indet 1		INDET												0.1													

	Vegetation Code			E07	E16	E16	E16	E16	E16	E16	E16	E16	E18	E18	E18	E18	E18	E18	E18	E18	E18	E18	E18	E36	E37	E37	E37	E38
				Eucalyptus capillosa mallee Woodland	Eucalyptus longicornis, E. salmonophloia Woodland occasional Eucalyptus aff. salubris, Eucalyptus sp. Dunbar Road P1, tall woodland over Melaleuca pauperiflora subsp. fastigiata, M. lanceolata 'subsp. thaeroides'									Eucalyptus salmonophloia, Eucalyptus aff. salubris Woodland over Acacia hemiteles, A. merrallii, Templetonia sulcata												Eucalyptus aff. salubris over Melaleuca spp. Woodland	Eucalyptus longicornis, E. extensa, E. polita, tall Woodland			Eucalyptus aff. s E. calycogona pauperiflora su
	Vegetation Condition			Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Very Good	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine	Pristine
	Likely TEC			TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC
	Quadrat Name			**MH067**	**MH024**	**MH044**	**MH049**	**MH054**	**MH056**	**MH057**	**MH100**	**MH113**	**MH022**	**MH042**	**MH043**	**MH045**	**MH051**	**MH061**	**MH104**	**MH110**	**MH111**	**MH112**	**MH121**	**MH065**	**MH058**	**MH127**	**MH129**	**MH046**
Poaceae	Austrostipa sp. indet 2		INDET																									
Poaceae	Austrostipa sp. indet 3		INDET														0.1											
Poaceae	Austrostipa sp. indet 5		INDET																		0.1							
Poaceae	Austrostipa sp. indet 6		INDET																				0.1					
Poaceae	Pentameris airoides subsp. airoides	W																										
Poaceae	Poaceae sp. indet (large open panicle)		INDET																									
Poaceae	Poaceae sp. indet 1		INDET																									
Poaceae	Poaceae sp. indet 2		INDET																	0.1								
Poaceae	Poaceae sp. indet 3		INDET																		0.1							
Poaceae	Rytidosperma setaceum														0.1													
Poaceae	Rytidosperma sp. indet 1		INDET				0.0																					
Poaceae	Rytidosperma sp. indet 3		INDET																									
Proteaceae	Grevillea ?beardiana	RE	INDET																									
Proteaceae	Grevillea aff. huegelii Marvel Loch form (P.M. Olde 91/4).	sp. nov. SOI																		0.5								
Proteaceae	Grevillea lissopleura	P1																										
Rhamnaceae	Stenanthemum sp. indet		INDET																									
Rutaceae	Microcybe multiflora		Indet subsp.																				0.1					
Rutaceae	Phebalium ?brachycalyx		INDET	2.5																								
Rutaceae	Phebalium lepidotum																											
Rutaceae	Phebalium sp. indet (long leaf)		INDET																									0.2
Rutaceae	Phebalium tuberculosum																											5.0
Santalaceae	Exocarpos capnodioides																				0.1							
Santalaceae	Exocarpos sparteus						0.3																					
Scrophulariaceae	Eremophila caerulea subsp. merrallii	P4																						0.1				
Scrophulariaceae	Eremophila metallicorum			0.1																								
Scrophulariaceae	Eremophila oppositifolia subsp. angustifolia																											
Scrophulariaceae	Eremophila saligna																	0.0										
Solanaceae	Lycium australe																				0.1							
Zygophyllaceae	Roepera ?glauca		INDET																		0.1							
Zygophyllaceae	Roepera sp. indet 1		INDET				0.1																					
Zygophyllaceae	Roepera sp. indet 2		INDET														0.1											
Zygophyllaceae	Roepera sp. indet 3		INDET															0.1										
Zygophyllaceae	Roepera sp. indet 4		INDET																									
Zygophyllaceae	Roepera sp. indet 5		INDET																									
	Total PFC			**54.1**	**53.2**	**48.1**	**40.0**	**47.7**	**46.5**	**51.0**	**61.4**	**23.4**	**31.2**	**95.6**	**56.5**	**22.7**	**45.8**	**58.1**	**20.6**	**47.4**	**30.7**	**66.5**	**33.1**	**58.7**	**25.8**	**43.4**	**33.7**	**55.7**
	Species Richness			**20.0**	**12.0**	**6.0**	**20.0**	**11.0**	**12.0**	**4.0**	**9.0**	**6.0**	**14.0**	**10.0**	**30.0**	**16.0**	**15.0**	**17.0**	**5.0**	**25.0**	**22.0**	**17.0**	**17.0**	**15.0**	**12.0**	**12.0**	**11.0**	**18.0**

	Vegetation Code			E38	E38	E38	E39	E40	E40	E40	E40	E47	
				alubris, Eucalyptus sp. Dunbar Road P1, occasional subsp. calycogona 5m woodland over Melaleuca bsp. fastigiata, over Templetonia sulcata, Acacia asepala P2, Atriplex bunburyana			Eucalyptus aff. salubris, E. longicornis tall woodland, over Tecticornia disarticulata	Eucalyptus aff. salubris, occasional E. sheathiana, E. polita P3 tall woodland over Melaleuca spp.				Eucalyptus capillosa mallee over Allocasuarina acutivalvis over Hibbertia eatoniae 0.4m, Grevillea lissopleura P1	
	Vegetation Condition			Pristine	Pristine	Pristine	Very Good	Pristine	Pristine	Pristine	Pristine	Pristine	
	Likely TEC			TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	
	Quadrat Name			**MH052**	**MH137**	**MH138**	**MH140**	**MH048**	**MH050**	**MH106**	**MH108**	**MH123**	
Family	**Confirmed Species Name**	**Cons_Status**	**Taxon_Status**										**Sum**
Fabaceae	Acacia merrallii			0.5	0.1			15.0	0.0	1.0	0.1		**24**
Myrtaceae	Eucalyptus aff. salubris glaucous branchlet form (WB40196)	sp. nov. SOI		0.0	0.1	10.0	0.1	50.0	1.0	15.0	5.0	7.0	**23**
Scrophulariaceae	Eremophila ionantha				1.0		0.1	0.1			3.0	0.1	**23**
Poaceae	Austrostipa elegantissima			0.1			0.1	0.2		0.1	1.0		**20**
Santalaceae	Santalum acuminatum			1.0	0.1					0.1		0.1	**20**
Scrophulariaceae	Eremophila scoparia				0.1		0.1	0.1			0.1		**20**
Asteraceae	Olearia muelleri				0.0			0.0		0.0			**16**
Myrtaceae	Eucalyptus longicornis				5.0	6.0	7.0						**15**
Myrtaceae	Melaleuca pauperiflora subsp. fastigiata			60.0	8.0			2.0	5.0				**15**
Chenopodiaceae	Sclerolaena diacantha			0.0	0.1		0.1			0.1	0.1		**13**
Fabaceae	Acacia asepala	P2			0.1			0.1	1.0	0.1	20.0		**13**
Fabaceae	Templetonia ceracea							0.1	2.0				**13**
Fabaceae	Daviesia argillacea							10.7		5.0	0.3	0.1	**12**
Santalaceae	Exocarpos aphyllus			0.0									**12**
Apocynaceae	Alyxia buxifolia												**10**
Myrtaceae	Melaleuca pauperiflora		Indet subsp.			7.0	4.0			10.0	1.0		**10**
Fabaceae	Acacia erinacea							2.0		3.0		0.1	**9**
Fabaceae	Templetonia sulcata				0.1					0.2	0.2	0.1	**9**
Myrtaceae	Eucalyptus salmonophloia			10.0				1.0					**9**
Goodeniaceae	Scaevola spinescens											0.1	**8**
Fabaceae	Senna artemisioides subsp. filifolia			0.0				7.0					**6**
Proteaceae	Grevillea comosa ms (P.M. Olde 91/14, 7 Sep 1991)	sp. nov. SOI						0.1					**10**
Rutaceae	Microcybe multiflora subsp. multiflora												**6**
Chenopodiaceae	Atriplex bunburyana/vesicaria		INDET		5.0	4.0	0.1						**5**
Fabaceae	Acacia colletioides				0.1			0.1					**5**
Myrtaceae	Melaleuca lanceolata				0.1								**5**
Myrtaceae	Melaleuca lateriflora										0.0		**5**
Sapindaceae	Dodonaea stenozyga							0.0				8.0	**5**
Scrophulariaceae	Eremophila decipiens subsp. decipiens							0.2	0.5		2.0		**5**
Asteraceae	Erymophyllum ramosum subsp. ramosum												**4**
Chenopodiaceae	Atriplex ?vesicaria		INDET	1.0					0.1				**4**
Fabaceae	Senna artemisioides		Indet subsp.							0.0			**4**
Myrtaceae	Eucalyptus ?flocktoniae subsp. flocktoniae or urna		INDET										**4**
Asparagaceae	Lomandra effusa												**3**
Asteraceae	Centaurea melitensis						0.1						**3**
Boraginaceae	Halgania andromedifolia									10.0	0.2		**3**
Casuarinaceae	Allocasuarina sp. indet (fine leaf)		INDET							0.1	0.0		**3**
Chenopodiaceae	?Sclerolaena diacantha		INDET							0.1	0.1		**3**
Chenopodiaceae	Tecticornia disarticulata				0.0	11.0	18.0						**3**
Convolvulaceae	Wilsonia humilis								0.1	0.0			**3**
Fabaceae	Acacia sp. indet (red midvein)		INDET							2.0			**3**
Myrtaceae	Eucalyptus polita	P3											**3**
Myrtaceae	Melaleuca acuminata subsp. acuminata												**3**
Asteraceae	Angianthus tomentosus												**2**

	Vegetation Code			E38	E38	E38	E39	E40	E40	E40	E40	E47	
				alubris, Eucalyptus sp. Dunbar Road P1, occasional subsp. calycogona 5m woodland over Melaleuca bsp. fastigiata, over Templetonia sulcata, Acacia asepala P2, Atriplex bunburyana			Eucalyptus aff. salubris, E. longicornis tall woodland, over Tecticornia disarticulata	Eucalyptus aff. salubris, occasional E. sheathiana, E. polita P3 tall woodland over Melaleuca spp.				Eucalyptus capillosa mallee over Allocasuarina acutivalvis over Hibbertia eatoniae 0.4m, Grevillea lissopleura P1	
	Vegetation Condition			Pristine	Pristine	Pristine	Very Good	Pristine	Pristine	Pristine	Pristine	Pristine	
	Likely TEC			TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	
	Quadrat Name			**MH052**	**MH137**	**MH138**	**MH140**	**MH048**	**MH050**	**MH106**	**MH108**	**MH123**	
Chenopodiaceae	Rhagodia sp. Watheroo (R.J. Cranfield & P.J. Spencer 8183)												1
Chenopodiaceae	Sclerolaena drummondii												1
Chenopodiaceae	Sclerolaena sp. indet		INDET										1
Chenopodiaceae	Tecticornia sp. indet		INDET										1
Cupressaceae	Callitris verrucosa												1
Cyperaceae	Lepidosperma sanguinolentum							0.1					1
Euphorbiaceae	Beyeria sulcata subsp. brevipes									0.5			1
Fabaceae	Acacia ?acuminata		INDET										1
Fabaceae	Acacia camptoclada							0.1					1
Fabaceae	Acacia deficiens												1
Fabaceae	Acacia nyssophylla												1
Fabaceae	Daviesia sp. indet		INDET						0.1				1
Fabaceae	Senna cardiosperma							0.1					1
Goodeniaceae	?Goodeniaceae sp.		INDET										1
Hemerocallidaceae	Dianella revoluta var. divaricata												1
Lamiaceae	Westringia cephalantha var. cephalantha											0.1	1
Lamiaceae	Westringia rigida												1
Loranthaceae	Amyema sp. indet		INDET										1
Myrtaceae	Eucalyptus aequioperta												1
Myrtaceae	Eucalyptus calycogona subsp miraculum	P1											1
Myrtaceae	Eucalyptus capillosa												1
Myrtaceae	Eucalyptus cylindrocarpa												1
Myrtaceae	Eucalyptus gracilis												1
Myrtaceae	Eucalyptus oleosa subsp. oleosa												1
Myrtaceae	Eucalyptus phenax subsp. phenax								30.0				1
Myrtaceae	Eucalyptus sp. indet (fine leaf)		INDET							0.5			1
Myrtaceae	Eucalyptus sp. indet (mallee, glossy pale green leaves)		INDET										1
Myrtaceae	Eucalyptus sp. indet (rough stocking to 2-3 m)		INDET										1
Myrtaceae	Eucalyptus sp. indet (wide dull blue green leaves, red margin and stems)		INDET										1
Myrtaceae	Eucalyptus sp. indet 1		INDET										1
Myrtaceae	Eucalyptus tephroclada												1
Myrtaceae	Melaleuca scalena												1
Myrtaceae	Melaleuca sp. indet (fine leaf lime green)		INDET							0.1			1
Myrtaceae	Melaleuca sp. indet 1		INDET										1
Poaceae	?Eriachne sp. indet		INDET										1
Poaceae	Amphipogon caricinus var. caricinus												1
Poaceae	Austrostipa ?pychnostachya		INDET										1
Poaceae	Austrostipa drummondii												1
Poaceae	Austrostipa hemipogon												1
Poaceae	Austrostipa platychaeta												1
Poaceae	Austrostipa sp. indet 1		INDET										1

	Vegetation Code			E38	E38	E38	E39	E40	E40	E40	E40	E47	
				alubris, Eucalyptus sp. Dunbar Road P1, occasional subsp. calycogona 5m woodland over Melaleuca bsp. fastigiata, over Templetonia sulcata, Acacia asepala P2, Atriplex bunburyana			Eucalyptus aff. salubris, E. longicornis tall woodland, over Tecticornia disarticulata	Eucalyptus aff. salubris, occasional E. sheathiana, E. polita P3 tall woodland over Melaleuca spp.				Eucalyptus capillosa mallee over Allocasuarina acutivalvis over Hibbertia eatoniae 0.4m, Grevillea lissopleura P1	
	Vegetation Condition			Pristine	Pristine	Pristine	Very Good	Pristine	Pristine	Pristine	Pristine	Pristine	
	Likely TEC			TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	TEC	
	Quadrat Name			**MH052**	**MH137**	**MH138**	**MH140**	**MH048**	**MH050**	**MH106**	**MH108**	**MH123**	
Chenopodiaceae	Rhagodia sp. Watheroo (R.J. Cranfield & P.J. Spencer 8183)												1
Chenopodiaceae	Sclerolaena drummondii												1
Chenopodiaceae	Sclerolaena sp. indet		INDET										1
Chenopodiaceae	Tecticornia sp. indet		INDET										1
Cupressaceae	Callitris verrucosa												1
Cyperaceae	Lepidosperma sanguinolentum							0.1					1
Euphorbiaceae	Beyeria sulcata subsp. brevipes									0.5			1
Fabaceae	Acacia ?acuminata		INDET										1
Fabaceae	Acacia camptoclada							0.1					1
Fabaceae	Acacia deficiens												1
Fabaceae	Acacia nyssophylla												1
Fabaceae	Daviesia sp. indet		INDET						0.1				1
Fabaceae	Senna cardiosperma							0.1					1
Goodeniaceae	?Goodeniaceae sp.		INDET										1
Hemerocallidaceae	Dianella revoluta var. divaricata												1
Lamiaceae	Westringia cephalantha var. cephalantha											0.1	1
Lamiaceae	Westringia rigida												1
Loranthaceae	Amyema sp. indet		INDET										1
Myrtaceae	Eucalyptus aequioperta												1
Myrtaceae	Eucalyptus calycogona subsp miraculum	P1											1
Myrtaceae	Eucalyptus capillosa												1
Myrtaceae	Eucalyptus cylindrocarpa												1
Myrtaceae	Eucalyptus gracilis												1
Myrtaceae	Eucalyptus oleosa subsp. oleosa												1
Myrtaceae	Eucalyptus phenax subsp. phenax								30.0				1
Myrtaceae	Eucalyptus sp. indet (fine leaf)		INDET							0.5			1
Myrtaceae	Eucalyptus sp. indet (mallee, glossy pale green leaves)		INDET										1
Myrtaceae	Eucalyptus sp. indet (rough stocking to 2-3 m)		INDET										1
Myrtaceae	Eucalyptus sp. indet (wide dull blue green leaves, red margin and stems)		INDET										1
Myrtaceae	Eucalyptus sp. indet 1		INDET										1
Myrtaceae	Eucalyptus tephroclada												1
Myrtaceae	Melaleuca scalena												1
Myrtaceae	Melaleuca sp. indet (fine leaf lime green)		INDET							0.1			1
Myrtaceae	Melaleuca sp. indet 1		INDET										1
Poaceae	?Eriachne sp. indet		INDET										1
Poaceae	Amphipogon caricinus var. caricinus												1
Poaceae	Austrostipa ?pychnostachya		INDET										1
Poaceae	Austrostipa drummondii												1
Poaceae	Austrostipa hemipogon												1
Poaceae	Austrostipa platychaeta												1
Poaceae	Austrostipa sp. indet 1		INDET										1

3.2.5. Statistical Analysis of Vegetation Associations

Statistical analyses were conducted amongst sample sites occurring within Vegetation Associations understood to represent the Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC. An iterative approach was employed, testing the effects of including and excluding Indet. species, and species recorded outside the quadrat sites (outs) on clustering of sites. All analyses were performed using both cover value (CV) and presence/absence (PA) data. The effects of removing annual species or singleton sites were not explored.

Taxonomically similar species, and those with records unable to be identified to subspecies level were respectively merged or simplified to species level. Parameters for each analysis, and associated Stress Values are presented in Table 4.

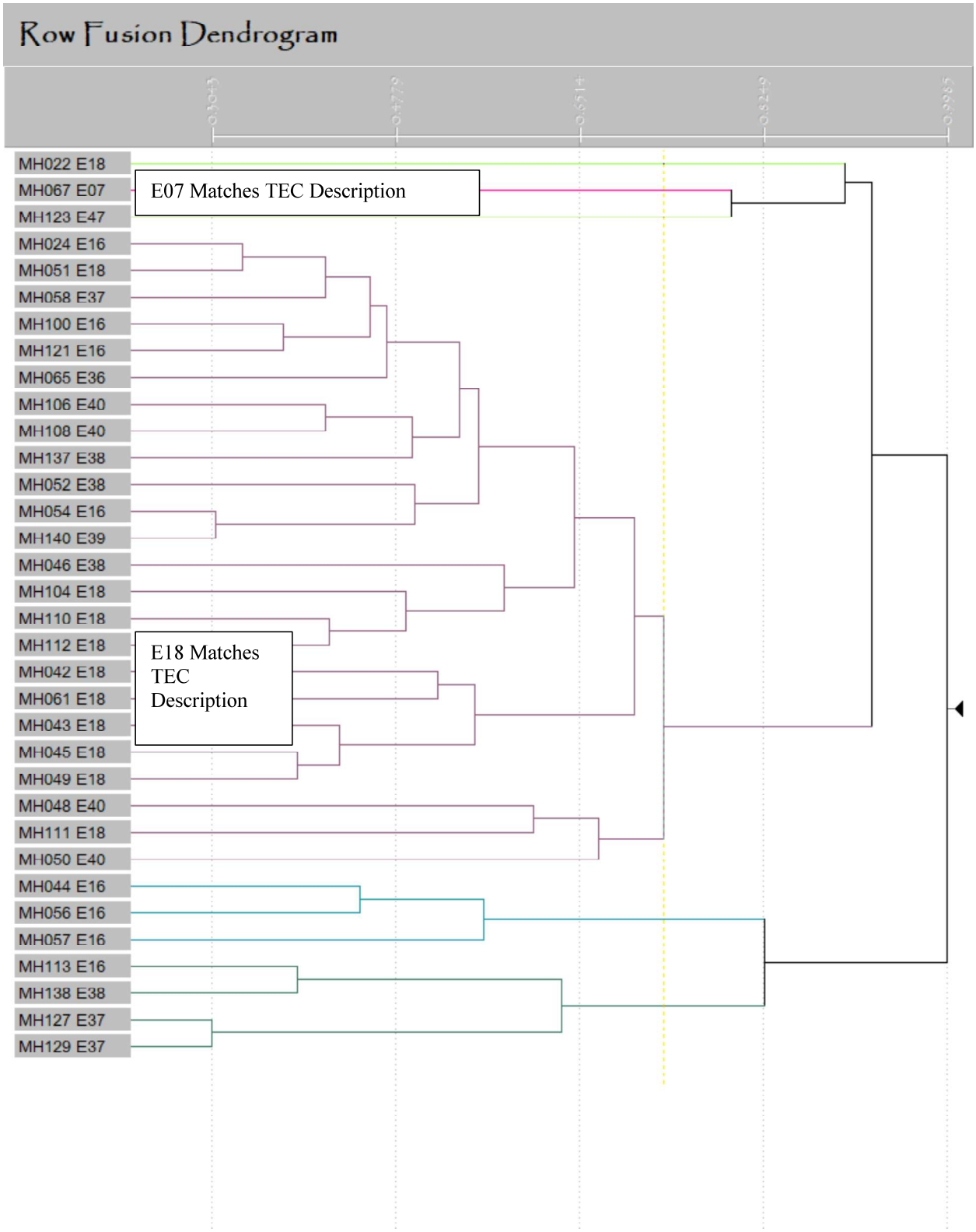
Table 4. Options utilised in preparation of the PATN Vegetation Analysis

Run	Outs	Indet. species	Data Format	Sites (n)	Species (n)	Stress Value
1.1	Excluded	Included	Cover Value	34	157	0.2209
1.2	Excluded	Included	Presence/Absence	34	157	0.2338
1.3	Included	Included	Cover Value	34	166	0.2046
1.4	Included	Included	Presence/Absence	34	166	0.2139
2.1	Excluded	Excluded	Cover Value	34	109	0.2112
2.2	Excluded	Excluded	Presence/Absence	34	109	0.2108
2.3	Included	Excluded	Cover Value	34	115	0.2062
2.4	Included	Excluded	Presence/Absence	34	115	0.1896

The most successful iteration was based on presence absence data, with the inclusion of 'outs', and the exclusion of Indet. species. Clustering analysis performed for 115 species from 34 sites found a stable 3-dimensional solution, generating an ordination stress value of 0.1896. This value is higher than the preferred threshold of 0.15, however, the option of further removing non-discriminatory (less important) species from the analysis to reduce the final stress value was discounted, in order to preserve the original dataset and retain species important in determining finer-scale floristic units.

The output from Run 2.4 of the PATN analysis is presented in Figure 6. This shows some disparity in the vegetation associations described, however, given the single-season assessment and likely under-representation of quadrats within some communities (fewer than three quadrats in some communities), this may be an artefact of the sample size to date.

Figure 6. Out 2.4 of the PATN Analysis of the tall eucalypt-dominated Communities.



3.2.6. Vegetation Condition

Vegetation condition within the Study Area has been assessed against the Vegetation Condition Scale presented in EPA (2016), Appendix 1. Vegetation which support tall eucalypt woodlands, some of which match the description of *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC* was mapped as Excellent to Pristine Condition. Of the 34 quadrats established, vegetation encompassing each quadrat was scored as in Pristine Condition at 32 sites and in Excellent Condition at two sites. This is typical of the vegetation condition in this region of the road alignment with few weeds and only minor apparent impacts from road construction and management, historical exploration and some limited small-scale mining.

Vegetation Condition within the vegetation associations which support tall eucalypt woodlands, some of which match the description of *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC* within the Study Area recognised the following broad categories of vegetation fire ages:

(i) areas of mature vegetation that had not been burnt in a very long time; and

(ii) areas that had been burnt in natural wildfires in the relatively recent past and where post-fire regeneration of vegetation was progressing well with all aspects of the vegetation well represented.

Exceptions to this are (i) areas of historical disturbance due to small scale-mining operations including open shafts, small waste dumps and areas of disturbance; (ii) occasional tracks; (iii) gravel pits operated by the Shire of Yilgarn; (iv) historical water catchment areas such as Dulcie Tank and the large area (approximately 1. 5 km of road alignment) known locally as the “Camel Patch”. Areas that have been totally cleared are mapped as Disturbed, in a Completely Degraded Condition. However, most historically disturbed sites have regenerated to a large degree through natural regeneration of eucalypt tree seedings and understorey species and are mapped as Good Condition.

Outside the vegetation associations which support tall eucalypt woodlands, *i.e.* those on sandplains supporting mallee and diverse low shrubland communities, areas had been chained and burnt for the development of Strategic Firebreaks. These areas, though temporarily altered, were regenerating well. However, many obligate-seeder species such as *Allocasuarina* species which form the dominant tall shrub stratum in adjacent un-chained and burnt vegetation, were notably absent following chaining and burning.

Vegetation Condition maps for the entire road alignment Study Area are presented in Appendix 6.

3.2.7. Priority and Threatened Ecological Communities

Inclusions – Priority Ecological Communities and Threatened Ecological Community`

A large proportion of the Central Study Area, lies within the northern-central part of the Parker Range PEC, which correlates strongly with the eastern fringe of the Merredin IBRA subregion.

From approximately chainage 58.5 km, *Eucalyptus longicornis* (Red Morrel) is the dominant tall eucalypt, growing on sandy clay soil with calcrete nodules. This is consistent with the Priority 1, Critically Endangered "Red Morrel Woodland of the Wheatbelt" PEC.

A small proportion of this Study Area, from approximately chainage 102 km to 103 km (1 km, 0.88% of the Study Area), lies within the *Ironcap Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill) (banded ironstone formation) Priority 3 PEC*. The vegetation here is not in close alignment with the definition of the PEC and may not represent this PEC *per-se.*

Exclusions

A small proportion of the Northern Study Area, from chainage 0.2 km to 4.7 km and from 7.2 km to 8.2 km (approximately 6.5 km in length, 13.0% of the road alignment), is represented by narrow roadside remnants of up to approximately 2m wide between the graded road embankment and adjacent farm fencelines. These remnants lie within the extensively cleared agricultural land of the eastern Wheatbelt of Western Australia. These contain remnant isolated individual trees and some small patches of tall eucalypts and smaller mallees with little or no native understorey. Due to the extent of clearing here, the majority of these are not recognised as either the *Eucalypt woodlands of the Western Australian Wheatbelt Priority 3 Priority Ecological Community (PEC)* or the equivalent EPBC listed *Woodlands of the Avon Wheatbelt TEC*.

The Great Western Woodlands (GWW) is an area of 16 million hectares of temperate woodland laying within the central and eastern Coolgardie biogeographic region, east of the extensively cleared agricultural region. Most of the tall eucalypt woodlands occurring within the Study Area lie within the GWW and are, by definition, excluded from the EPBC listed *Woodlands of the Avon Wheatbelt TEC (*Department of Environment, 2015). Proposed disturbance to 4.39 ha tall eucalypt woodlands occurring within the Great Western Woodlands (not considered TEC) is planned within the road alignment upgrade.

From approximately chainage 58.5 km, *Eucalyptus longicornis* (Red Morrel) is the dominant tall eucalypt, growing on sandy clay soil with calcrete nodules. The dominant species composition and structure is consistent with the Priority 1, Critically Endangered "Red Morrel Woodland of the Wheatbelt" PEC. However, within the Study area, this lies within the Great Western Woodlands, and is therefore excluded as a component of the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC.*

3.2.8. Flora

Much of the flora of the Study Area is highly representative of the Merredin IBRA subregion (occurring to the west, inclusive of parts of the Study Area within the Avon Wheatbelt IBRA region) and the Southern Cross IBRA subregion (occurring to the east and inclusive of parts of the Study Area within the Coolgardie IBRA region). Some species recorded are more widely known in the Western Mallee IBRA subregion which occurs outside and to the south of the Study Area. The position of the Study Area in relation to IBRA regions and subregions are discussed in Western Botanical (2023a), Appendix 2.

The flora of the Central Study Area region which is influenced by erosion products from the Parker Range is complex, diverse, often demonstrates high endemism, has a strong correlation with soil type and landscape position on heavier soils. Those communities occurring on aeolian yellow sandplains and lateritic gravel and ferricrete soil types demonstrate endemism and high species turnover.

The *Eucalyptus* mallee woodlands and tall mallet woodlands on clay and sandy clay soils, and the *Acacia* and *Allocasuarina* shrublands on laterite gravel are strongly influenced by the weathering products from the adjacent Parker Range.

The cumulative species list for the vegetation associations meeting the description of the Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC is incomplete as only a single pass quadrat-based survey in summer has been undertaken. The species list achieved to date, complete with flora specimens not fully identified, is presented in Appendix 3.

Much of the focus to date has been on identifying and adequately addressing Threatened flora, Priority flora and Species of Interest (representing new taxa). These are presented in the next section.

Specimens of all Significant Flora have been vouchered at the WA Herbarium (Accession 10259) with as much information as possible accompanying each specimen to facilitate a relatively rapid third-party confirmation of Priority flora and validation of the new species to be recognised by the WA Herbarium.

3.2.9. Significant Flora

Assessments of Significant Flora inclusive of Threatened and Priority flora and Species of Interest (new species) were conducted at high density, at 10 m intervals between operators. Productivity for a team of five or six people in the Targeted Surveys ranged from a maximum linear length of 5.4 km of roadside vegetation per day in areas where relatively few significant species were encountered to a minimum of 850m per day where many significant species were encountered in large numbers.

3.2.9.1. Threatened Flora

There are no Threatened Flora recorded in vegetation associations which match the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC within and adjacent to the Moorine Rock to Mt Holland road alignment.

3.2.9.2. Priority Flora

Nine Priority flora are noted as occurring within the tall eucalypt woodlands vegetation associations, some of which match the description of the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.

Within the TEC communities, nine Priority Flora are known to occur, Table 5. These are three Priority 1, three Priority 2, two Priority 3 and one Priority 4 species.

3.2.9.3. Novel Species

Two locally endemic new *Grevillea* species and one widespread newly recognised *Eucalyptus* species were recorded, Table 5.

3.2.9.4. Range Extensions

No Range Extensions were recorded for species within the TEC communities.

Conservation Codes for Western Australian Flora and Fauna are presented in Appendix 4.

Table 5. Priority Flora of the Study Area within vegetation associations matching the description of the Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC

Priority Status	Number of Taxa	Species
Priority 1	**2**	Eucalyptus calycogona subsp. miraculum Grevillea lissopleura
Priority 2	**3**	Acacia asepala Acacia concolorans Eutaxia lasiocalyx
Priority 3	**3**	Eucalyptus polita subsp. ocreta Eucalyptus urna subsp. xesta P3 (formerly Eucalyptus sp. Dunbar Road (D. Nicolle & M. French DN 5466) P1) Teucrium diabolicum
Priority 4	**1**	Eremophila caerulea subsp. merrallii
Species of Interest, representing novel species	**3**	Eucalyptus aff. salubris glaucous branchlet form (WB40196)

Priority Status	Number of Taxa	Species
		Grevillea comosa ms (P.M. Olde 91/14, 7 Sep 1991) Grevillea aff. huegelii Marvel Loch form (P.M. Olde 91/44) NSW782779
Minor weeds	**2**	Brassica tournefortii (Wild Radish) Pentameris airoides subsp. airoides (False Hair Grass)

The majority of Priority Flora noted within the Central Section of the Study Area which were known as Priority Flora as at 2010, were not reported in Botanica Consulting (2010) and the Mt Caudan Diversion Road has been built through many populations of Priority 1, P2, P3 and P4 flora populations as well as through populations of new species with limited known distributions.

Proposed impacts to Priority Flora by the current proposal are itemised in Table 6.

Maps depicting the distributions of Priority Flora, including within the TEC, are presented in Appendix 7.

Brief descriptions of these species are presented below.

Priority 1

Eucalyptus calycogona subsp. *miraculum* P1

> Mallee to 4m with characteristic pruinose (blue-green) foliage and glaucous, white waxy branchlets and glossy red-brown to coppery bark on lower stems and a small rough stocking at the base. This species found on the margins of weathered duricrust outcrops and also occurs on the margins of tall woodlands supporting *Eucalyptus salmonophloia* and *Eucalyptus* aff. *salubris* glaucous branchlet form (WB40196). It is not a key component of the TEC, rather it is an associated species.

Grevillea lissopleura P1

Shrub to 1.5m high x 3m wide in good conditions with run-on catchment, narrow leaves and small white flowers in Spring.

Priority 2

Acacia asepala P2

Lignotuberous shrub to 1.2m high x up to 3m wide with small yellow flowers and short stiff spiny phyllodes to 25mm long x 1.2mm wide and with five veins per phyllode. Associated with *Eucalyptus longicornis* (Red Morrel) on silty sandy clay soils with calcrete nodules. Has been recorded resprouting from lignotuber and germinating from seed following fire.

Acacia concolorans P2

Single-stemmed low spreading shrub to 0.3m high x up to 2m wide with spiny phyllodes. Occurs on lateritic breakaways and laterite gravel deposits, known to regenerate profusely from soil stored seeds following disturbance at the British Hill minesite.

Eutaxia lasiocalyx P2

A delicate divaricately-branched small shrub to 0.3m high x 0.8m wide with fine stems and tiny appressed leaves, orange flowers in Spring. Widely recorded under Gimlets and Salmon Gums in the area between Marvel Loch and Forrestania, abundant after fire and absent from adjacent un-burnt vegetation.

Priority 3

Eucalyptus polita subsp. *ocreta* P3

Single stemmed tree, killed by fire and an obligate re-seeder (mallet), with white bark and glossy green foliage. It occurs with *E. salmonophloia*, *Eucalyptus* aff. *salubris* glaucous branchlet form (WB40196) and *E.* sp. Dunbar Road (D. Nicolle & M. French DN 5466) P1 on the lower slopes of the Parker Range. It is very difficult to differentiate non-fruiting or flowering trees from *E.* sp. Dunbar Road (D. Nicolle & M. French DN 5466) and neither species has been fully assessed within the Study Area. This species has recently been described as *Eucalyptus polita* subsp. *ocreta* (Austral.J.Taxon. 46:3-5, Fig. 3 (2023).

Eucalyptus urna subsp. *xesta* P3 (formerly *Eucalyptus* sp. Dunbar Road (D. Nicolle & M. French DN 5466) P1)

Single-stemmed tree, killed by fire and an obligate re-seeder (mallet), with white bark and glossy green foliage. It occurs with *E. salmonophloia*, *Eucalyptus* aff. *salubris* glaucous

branchlet form (WB40196) and *E. polita* subsp. *ocreta* P3 on the lower slopes of the Parker Range. It is very difficult to differentiate non-fruiting or non-flowering trees from *E. polita* subsp. *ocreta* and neither species has been fully assessed within the Study Area. This species has recently been described as *Eucalyptus urna* subsp. *xesta* (Austral.J.Taxon. 46:3-5, Fig. 3 (2023).

Teucrium diabolicum P3

A low small shrub to 0.15m high with small white flowers in Spring and underground rhizomes; patches of plants representing individuals are connected by aerial stems. Only found in small low-lying depressions in heavy self-mulching clay under Gimlets, often with outcropping basalt rocks.

Priority 4

Eremophila caerulea subsp. *merrallii* P4

A diminutive single stemmed shrub to 0.2m high x 0.5m wide with small purple flowers in Spring. Known from few locations in the Study Area, associated with the lower slopes of low, highly weathered banded ironstone hills of the Parker Range. No individuals of *Eremophila caerulea* subsp. *merrallii* are proposed to be directly impacted.

3.2.9.5. Species of Interest

New Species

Three Species of Interest are known within the vegetation associations matching the description of the Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC within the Study Area. One of these is widespread in the eastern Avon Wheatbelt and western part of the Coolgardie biogeographic region while two species seem to be Parker Range endemic taxa.

Species of Interest – Widespread undescribed species not warranting Conservation Assessment – 1 species:

Eucalyptus aff. *salubris* glaucous branchlet form (WB40196).

Species of Interest – Poorly Collected in W.A. – 2 species, Parker Range endemic taxa:

Grevillea aff. *huegelii* Marvel Loch form (P.M. Olde 91/44) NSW782779, PROTEACEAE. Yellow flowered prostrate plant only known in the study area from the NE corner of the bend in the Parker Range diversion road – and then in an NE direction through to the Marvel Loch – Forrestania road

Grevillea comosa ms (P.M. Olde 91/14, 7 Sep 1991 (NSW). PROTEACEAE (formerly within the *Grevillea acuaria* group)

These are briefly described below.

Eucalyptus aff. *salubris* glaucous branchlet form (WB40196)

> Single stemmed tree, killed by fire and an obligate re-seeder (mallet), with terracotta brown semi-glossy bark and glossy green adult leaves. Differs from typical *E. salubris* in having pruinose (blue-green) juvenile leaves and coppice growth and glaucous (white waxy) branchlets on relatively young main stems. Widespread species from Merredin to Norseman and Menzies in the eastern Avon Wheatbelt and western Coolgardie biogeographic regions.

Grevillea comosa ms (P.M. Olde 91/14, 7 Sep 1991)

> Single stemmed shrub with narrow bright green foliage to 30 x 2mm, and small bunches of red flowers in Spring. Restricted to the Parker Range region. Formerly within the *Grevillela acuaria* complex and being described by Mr. Peter Olde, NSW Herbarium. No individuals of *Grevillea comosa* ms (P.M. Olde 91/14, 7 Sep 1991) are proposed to be directly impacted.

Grevillea aff. *huegelii* Marvel Loch form (P.M. Olde 91/44) NSW782779

> Single stemmed prostrate (growing flat on the ground) shrub with markedly blue-grey spiny trifurcately divided pungent leaves and yellow flowers in Spring. Restricted to the Parker Range – Marvel Loch region. Formerly within the *Grevillela huegelii* complex and being described by Mr. Peter Olde, NSW Herbarium. No individuals of *Grevillea* aff. *huegelii* Marvel Loch form (P.M. Olde 91/44) NSW782779 are proposed to be directly impacted.

Potential impacts to Species of Interest by the current proposal are itemised in Table 6.

3.3. Impact Assessment – Flora

3.3.1. Impacts to Threatened, Priority and Species of Interest Flora

No Threatened, Priority flora or Species of Interest flora occur within the proposed disturbance footprint within the road alignment in tall eucalypt communities matching the description of *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.

The information presented in Table 6 represents the numbers of individuals and proportions of each Threatened, Priority or Species of Interest flora species known at 29th February 2024 that are proposed to be impacted within tall eucalypt communities outside the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.

Table 6. Impacts to Threatened, Priority and Species of Interest Flora within tall eucalypt woodland communities, some of which represent TEC

Taxon	Occurring within TEC?	Taken -	Grand Total Known Locally (Regionally)	Taken %
Threatened				
NIL		Nil	Nil	Nil
Priority 1				
Eucalyptus calycogona subsp. miraculum	No	Nil	Nil	Nil
Grevillea lissopleura	No	86	5,514	1.56%
Priority 2				
Acacia asepala	No	103	24,901	0.41%
Acacia concolorans	No	3	4,708	0.06%
Eutaxia lasiocalyx	No	4	172,907	0.002%
Priority 3				
Eucalyptus polita subsp. ocreta	No	Present, (Incomplete Assessment)	566 (Incomplete Assessment)	Not calculated
Eucalyptus urna subsp. *xesta* P3 (formerly *Eucalyptus* sp. Dunbar Road (D. Nicolle & M. French DN 5466) P1)	No	8 (Incomplete Assessment)	2,796 Thousands, based on casual observation (not assessed regionally)	Not calculated
Teucrium diabolicum	No	4	71,045	0.01%
Priority 4				
Eremophila caerulea subsp. merrallii	No	Nil	76	Nil
Species of Interest				
Eucalyptus aff. salubris pruinose branchlet form (G. Cockerton & J. Warden WB40196)	No	Present, Not assessed	1,661 minimum Tens of thousands known locally (Not assessed regionally)	Not calculated
Grevillea comosa ms (P.M. Olde 91/14, 7 Sep 1991)	No	Nil	18,486	Nil
Grevillea aff. huegelii Marvel Loch form (P.M. Olde 91/44) NSW782779	No	Nil	498	Nil

Notes on Impacts to Priority Flora

1. For both *Eucalyptus urna* subsp. *xesta* P3 (formerly *Eucalyptus* sp. Dunbar Road (D. Nicolle & M. French DN 5466) P1) and *Eucalyptus polita* subsp. *ocreta* P3, the counts within the 50m either side of the road alignment for these species is significantly under-representative of the numbers of plants present and are reported here as "Incomplete Assessment". These will need to be addressed in additional field survey. Regional populations of these species have not been assessed.

2. Records of *Grevillea comosa* (SOI) outside the 50 m wide (either side of the road) Detailed Study Area are incomplete and under-representative of the overall population.

3.4. Weeds

Minor weeds were encountered within the entire Study Area. These are presented in Table 7. No weeds of National Significance (WoNS) or Declared Pests were recorded within the Study Area.

Within the Study Area, no weeds were recorded from Fence Road on the newly constructed Mount Caudan Minesite Diversion Road around the northern end of the Parker Range to near the intersection of Parker Range Rd with the Marvel Loch – Forrestania Road. However, at this intersection and in westerly, northerly and southerly directions following the road alignments for several hundred metres, numerous minor weed populations are known. The most obvious of these is *Centaurea meletensis* (Maltese Cockspur) and *Mesembryanthemum nodiflorum* (Slender Iceplant). The former is largely restricted to roadsides where additional moisture gathers and the latter is widespread under the tall eucalypts.

Typical pasture weeds such as Wild Oats, Brome Grasses, Wild Turnip and present in the northern ~50 km of the Study Area and are most prevalent where tall eucalypt woodlands have been parkland cleared, leaving little to no intact understory.

The southern-most ~70 km of the Study Area is largely weed free, though small patches of Maltese cockspur are present in some low lying, moisture-gaining sites.

Table 7. Weeds of the entire Study Area

Taxon	Common Name	Description	Comment	Within TEC?
Avena fatua	Wild Oats	Annual grass to 1m	Minor weed. Common at the Moorine Rock rail siding, occasional in Northern Section of Study Area adjacent to agricultural land	Possible
Centaurea meletensis	Maltese Cockspur	Annual low herb with basal rosette and flowering spike to 0.7m tall with spiny thistle-like fruits.	Minor weed. Commonly encountered in patches, particularly in small depressions on roadsides in clay soil. This is the most obvious weed of the alignment and readily be managed.	Possible
Brassica tournefortii	Wild Turnip	Annual weed with basal rosette and flowering spike to 0.8m.	Minor weed. Uncommon in low numbers, more common in low lying areas subject to run-on. More abundant on the Parker Range Road between chainage 24 to 28 km, on clay soil adjacent to agricultural land.	Yes

Taxon	Common Name	Description	Comment	Within TEC?
Bromus diandrus	Great Brome Grass	Annual grass to 0.5m	Minor weed. Uncommon in low numbers more common in low lying areas subject to run-on.	Possible
Bromus rubens	Red Brome Grass	Annual grass to 0.5m	Minor weed. Uncommon in low numbers more common in low lying areas subject to run-on.	Possible
Carrichtera annua	Ward's Weed	Erect annual, herb, 0.05-0.4 m high	Minor weed. Locally common at the Camel Patch on clay soil, uncommon elsewhere	Possible
Cleretum papulosum subsp. papulosum	n/a	Prostrate, succulent annual, herb to 0.1 m	Minor weed. Uncommon in low numbers	Possible
Erodium moschatum	Musky Crowfoot	Small annual with basal rosette	Minor weed. Uncommon in low numbers	Possible
Hypochaeris glabra	Smooth Cat's Ear	Small soft annual herb to 0.6m	Minor weed. Uncommon in low numbers, mostly in disturbed soil	Possible
Mesembryanthemum nodiflorum	Slender Iceplant	Prostrate succulent herb to 0.1m high x 0.4m wide	Minor weed. Widespread on clay soils	Possible
Moraea lewisiae		Perennial cormerous herb to 0.3m	Minor weed. Low numbers in soil pockets on granite rocks, larger numbers in low lying wet areas	No

Taxon	Common Name	Description	Comment	Within TEC?
Moraea setifolia		Perennial cormerous herb to 0.3m	Minor weed. Low numbers in soil pockets on granite rocks, larger numbers in low lying wet areas	No
Oncosiphon suffruticosum	Calomba Daisy	Annual resinous obnoxiously fragrant herb with prominent head of small yellow flowers	Minor weed. Minor range extension to the south	No
Pentameris airoides subsp. airoides	False Hairgrass	Small annual grass to 0.2m	Minor weed. Widespread in low numbers	Yes
Sisymbrium runcinatum		Prostrate to ascending annual, herb, 0.05-0.5 m high. Fl. yellow-white	Minor weed. Uncommon in low numbers	Possible
Trifolium arvense	Hare's Foot Clover	Erect or spreading annual, herb, to 0.5 m high. Fl. pink/white/green,	Minor weed. Uncommon in low numbers	Possible

3.5. Impact Assessment – Vegetation

Despite significant design adjustments to minimise clearing, implementation of the road upgrade requires unavoidable impacts to 0.40 ha of vegetation that matches the description of *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*. These are presented in Table 8.

Within the intersection of the Study Area with the mapped Great Western Woodlands, a further 4.39 ha of tall eucalypt woodlands, not meeting the description of the TEC, is planned to be taken in road upgrade program. The descriptions of these communities are presented in Table 9.

Table 8. Proposed impacts to vegetation that matches the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC

Veg Code	Count	Sum Area ha	Clearing	Within GWW	TEC	Type	Structure	Soil	# Patches	Vegetation Description
E07	12	0.129094	Uncleared Land	No	Yes	Eucalypt dominated Woodlands and Shrublands	Mallee Shrubland	weathered lateritic pizolitic gravel, saprolyte	2	Eucalyptus capillosa mallee woodland over Allocasuarina acutivalvis subsp. acutivalvis and Callitris preissii shrubland on low lateritic, saprolitic hills.
E18	39	0.272158	Uncleared Land	No	Yes	Eucalypt dominated Woodlands and Shrublands	Tall Eucalypt Woodland	red-brown sandy clay	2	Eucalyptus salmonophloia, Eucalyptus aff. salubris pruinose branchlet form (G. Cockerton & J. Warden WB40196), occasional E. moderata tall woodland, patches of Eucalyptus yilgarnensis, occasional E. tephroclada mallee to 6m, occasional E. calycogona 5m over Melaleuca pauperiflora over Acacia hemiteles, A. merrallii (short form), Templetonia sulcata medium shrubs over Chenopods on dark brown clayey sandy soil
		0.401252	**Total uncleared TEC**							

Table 9. Other Vegetation Associations, including tall eucalypt woodlands within the Great Western Woodlands, not meeting Criteria for Threatened Ecological Community, within the Study Area.

Veg Code	Count	Sum Area ha	Clearing	Within GWW	TEC	Type	Structure	Soil	Vegetation Description
DIST	101	**0.154281**	**Cleared Land**		No			various	Disturbed Land
E16	47	2.024159	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Tall Eucalypt Woodland	red-brown loam with calcrete nodules	Eucalyptus longicornis, E. salmonophloia, occasional Eucalyptus aff. salubris pruinose branchlet form (G. Cockerton & J. Warden WB40196), Eucalyptus urna subsp. xesta P3, tall woodland over Melaleuca pauperiflora subsp. fastigiata, M. lanceolata 'subsp. thaeroides', on alkaline loam
E18	1	0.000002	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Tall Eucalypt Woodland	red-brown sandy clay	Eucalyptus salmonophloia, Eucalyptus aff. salubris pruinose branchlet form (G. Cockerton & J. Warden WB40196), occasional E. moderata tall woodland, patches of Eucalyptus yilgarnensis, occasional E. tephroclada mallee to 6m, occasional E. calycogona 5m over Melaleuca pauperiflora over Acacia hemiteles, A. merrallii (short form), Templetonia sulcata medium shrubs over Chenopods on dark brown clayey sandy soil
E22	3	0.000096	Uncleared Land	No	No	Eucalypt dominated Woodlands and Shrublands	Mallee Shrubland	yellow sand	Eucalyptus rigidula, Eucalyptus leptopoda subsp. leptopoda; over Acacia beauverdiana 4m, Hakea francisiana 4m, Santalum acuminatum 3.5m, Allocasuarina corniculata 2.5m, Allocasuarina acutivalvis 4m; over Beyeria sp. VM 70-06 1.8m, Phebalium sp. ovate (WB40839) 1m, Thryptomene kochii 1m,

Veg Code	Count	Sum Area ha	Clearing	Within GWW	TEC	Type	Structure	Soil	Vegetation Description
E31	2	0.00256	Uncleared Land	No	No	Eucalypt dominated Woodlands and Shrublands	Mallee Shrubland	weathered lateritic pizolitic gravel, saprolyte	Eucalyptus tephroclada, E. sheathiana, E. capillosa, E. moderata mallee shrubland over very open Melaleuca acuminata, M. lateriflora, M. hamata tall shrubs over Daviesia argillacea, Westringia cephalantha, Olearia muelleri shrubland. May also support Acacia concolorans P2. on weathered lateritic pizolitic, saprolyte
E36	6	0.014072	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Tall Eucalypt Woodland	dark red-brown clay	Eucalyptus aff. salubris pruinose branchlet form (G. Cockerton & J. Warden WB40196) tall woodland over Melaleuca pauperiflora subsp. fastigiata over Microcybe multiflora subsp. multiflora on red-brown clay in valley floor
E37	2	0.002505	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Tall Eucalypt Woodland	red-brown loam with calcrete nodules	Eucalyptus longicornis, E. extensa, E. polita tall woodland over Melaleuca pauperiflora subsp. fastigiata, M. lanceolata (subsp. thaeroides) tall shrubs over scattered Atriplex bunburyana, Acacia merrallii (low form) and Acacia asepala P2 low shrubs on red-brown loam with calcrete nodules
E38	6	0.107704	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Tall Eucalypt Woodland	red-brown loam with calcrete nodules	Eucalyptus aff. salubris (G. Cockerton & J. Warden WB40196), Eucalyptus urna subsp. xesta P3, occasional E. calycogona subsp. calycogona 5m woodland over Melaleuca pauperiflora subsp. fastigiata, over Templetonia sulcata, Acacia asepala P2, Atriplex bunburyana on red-brown sandy clay with calcrete nodules

Veg Code	Count	Sum Area ha	Clearing	Within GWW	TEC	Type	Structure	Soil	Vegetation Description
E39	3	1.20977	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Tall Eucalypt Woodland	red-brown sandy clay, saline	Eucalyptus aff. salubris pruinose branchlet form (G. Cockerton & J. Warden WB40196), E. longicornis tall woodland over Tecticornia disarticulata low shrubs on red clay in valley floor
E40	24	0.115489	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Tall Eucalypt Woodland	red-brown sandy clay	Eucalyptus aff. salubris pruinose branchlet form (G. Cockerton & J. Warden WB40196), occasional E. sheathiana, E. polita P3 tall woodland over Melaleuca pauperiflora subsp. fastigiata, M. acuminata tall shrubs over Halgania andromedifolia, Daviesia argillacea and Acacia castanostegia, Eutaxia lasiocalyx P3, Acacia asepala P2 low shrubs on red-brown sandy gravel or with basalt rocks and clay.
E42	3	0.003745	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Mallee Shrubland	lateritic pizolitic gravel	Eucalyptus loxophleba subsp. lissophloia, Eucalyptus ecdysiastes ms, Eucalyptus capillosa mallee over Allocasuarina corniculata, A. campestris, Acacia assimilis, Grevillea obliquistigma subsp. obliquistigma over Westringia cephalantha ?var. caterva, Hibbertia eatoniae, Lepidosperma sp. GCBL-223
E43	1	0.000045	Uncleared Land	No	No	Eucalypt dominated Woodlands and Shrublands	Mallee Shrubland	yellow sand	Eucalyptus virella, Melaleuca halmaturorum, M. lateriflora, Hakea preissii, with Acacia asepala P2 on the sandy margin of salt lake playa
E44	1	0.000155	Uncleared Land	No	No	Eucalypt dominated Woodlands and Shrublands	Mallee Shrubland	red-brown silty sand	Eucalyptus virella, E. yilgarnensis, occasional E. salmonophloia over Acacia colletioides, Bertya dimerostigma, Microcybe multiflora subsp. baccharoides, Grevillea comosa ms and Triodia sp.

Veg Code	Count	Sum Area ha	Clearing	Within GWW	TEC	Type	Structure	Soil	Vegetation Description
E47	1	0.065116	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Mallee Shrubland	lateritic pizolitic gravel and ferricrete	Eucalyptus capillosa mallee over Allocasuarina acutivalvis over Hibbertia eatoniae 0.4m, Grevillea lissopleura P1, Rinzia carnosa, occasional Lepidosperma sp. GC-36 and Borya constricta
E52	1	0.001906	Uncleared Land	Yes	No	Eucalypt dominated Woodlands and Shrublands	Mallee Shrubland	dark red-brown clay, saline	Eucalyptus myriadena 8 to 10m, PFC 15% woodland over Tecticornia disarticulata, Atriplex bunburyana shrubland on dark red-brown saline clay soil.
S01	2	0.000736	Uncleared Land	No	No	Acacia, Allocasuarina and Melaleuca Dominated Shrublands	Allocasuarina corniculata, Allocasuarina spinosissima Thicket complex	yellow sand over lateritic pizolitic gravel	Complex of Allocasuarina corniculata, A. spinosissima tall shrub thickets with varied midstory including Thryptomene kochii, Baeckea elderiana, Melaleuca calyptroides, M. laxiflora, Beyeria minor, Hakea meisneriana, Isopogon scabriusculus, Leucopogon sp. Forrestania (G.F. Craig 2386). Following fire or site disturbance, may contain Chamelaucium sp. Mt Holland (P1), Thryptomene sp. Hyden (P1).
S04	7	0.087499	Uncleared Land	No	No	Acacia, Allocasuarina and Melaleuca Dominated Shrublands	Allocasuarina acutivalvis Shrubland	lateritic pizolitic gravel	Complex of Allocasuarina acutivalvis, Calothamnus gilesii tall shrub thickets over Thryptomene kochii, Grevillea paradoxa medium shrubs over Melaleuca cordata low shrubs on lateritic pizolitic gravel. May contain emergent Eucalyptus mallee species.
S16	1	0.000001	Uncleared Land	No	No	Acacia, Allocasuarina and Melaleuca Dominated Shrublands	Mallee Shrubland	yellow sand	Eucalyptus rigidula, Eucalyptus platycorys, Eucalyptus burracoppinensis, Eucalyptus leptopoda subsp. leptopoda emergent mallee shrubland over tall shrub thicket of Allocasuarina spinosissima and A. corniculata on yellow sand

Veg Code	Count	Sum Area ha	Clearing	Within GWW	TEC	Type	Structure	Soil	Vegetation Description
S33	1	0.001481	Uncleared Land	No	No	Acacia, Allocasuarina and Melaleuca Dominated Shrublands	Allocasuarina Shrubland	lateritic pizolitic gravel	Allocasuarina corniculata tall shrubs over Hysterobaeckea ochropetala subsp. reliqua and Myrtaceae spp. low shrubs on lateritic pizolitic gravel
S34	1	0.000502	Uncleared Land	No	No	Acacia, Allocasuarina and Melaleuca Dominated Shrublands	Allocasuarina Shrubland	weathered banded ironstone	Allocasuarina acutivalvis, occasional Hakea pendens P3 tall shrubland with emergent Eucalyptus capillosa mallee over Phebalium tuberculosum sens. str., Hibbertia aff. exasperata, Stenanthemum aff. bremerense P4 (WB40845) low shrubs on weathered lateritic pizolitic gravel, weathered banded ironstone, saprolyte
S44	1	0.000045	Uncleared Land	No	No	Acacia, Allocasuarina and Melaleuca Dominated Shrublands	Tecticornia shrubland	dark red-brown clay, saline	Tecticornia indica subsp. bidens low shrubland on salt lake margin on saline dark red-brown clay
		4.789788	**Total uncleared land**						

Principle (a) – Native vegetation should not be cleared if it comprises a high level of biological diversity.

Each vegetation association within the Study area has moderate to low species diversity. The number of Vegetation Associations in total within the Study Area is high and the arithmetic calculation of species richness across the entire study area is therefore high. Communities growing on sandplain and laterite gravel have the highest species richness within the Study Area. Complete species lists are yet to be finalized.

Vegetation associations supporting tall eucalypt woodlands have species richness values of between 4 and 30 species. Some of these match the description of the of the *Eucalypt woodlands WA Wheatbelt EPBC listed TEC.* Given assessments are based on a single dry season quadrat assessment, the species list is likely under-representative of the total species list of these communities.

The Project is not at variance with this principle.

Principle (b) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

The proposed impacts during the road upgrade are mostly minor widening of the road and realignment of four intersections. These represent relatively minor amounts of clearing over a project area of 113 km and should not represent significant impacts on habitat for supporting any native fauna.

The Project is not at variance with this principle.

Principle (c) – Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

There are no Threatened Flora known within the vegetation associations matching the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC.

Threatened flora of the region includes *Banksia dolichostyla* (T), which is known in the southern 2.1 km of the entire Study Area, from King Ingram Road to the Mt Holland minesite turnoff. No *Banksia dolichostyla* are anticipated to be directly taken in the road upgrade program. *Eremophila verticillata* (T) and *Eucalyptus steedmanii* (T) are known near the Mt Holland minesite and do not occur within or nearby the Moorine Rock to Mt Holland minesite road alignment. *Isopogon robustus* (T) is known south of the Central Study Area on the eastern side of the Parker Range and is not known within 500m of the proposed road alignment.

Nine Priority Flora and three Species of Interest are present within tall eucalypt woodlands of the Study Area, however, however, none of these lie within the 0.4 ha of proposed disturbance to vegetation matching the description of *Eucalypt woodlands WA Wheatbelt EPBC listed TEC*.

Populations of several Priority Flora exist within lowlands adjacent to the road alignment (*Rinzia medifila* P1, *Rinzia fimbriolata* P1, *Melichrus* sp. Coolgardie (K.R. Newbey 8698) (P1). The existing road, built recently, has already impacted many of these as they were not reported in the flora survey supporting this previous development. Changes to local hydrology may affect these species through either prologued inundation or water starvation.

Several Species of Interest, representing new species, are also present within the alignment. Of these, *Grevillea* sp. aff. *huegelii* Marvel Loch. P.M. Olde 91/44 NSW782729 (SOI), is the species with the smallest known range (between Marvel Loch and Parker Range) and has the highest conservation value. No impacts to this species are planned in the current program.

The Project is not at variance with this principle.

Principle (d) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.

A large proportion of the Study Area lies within the Parker Range PEC which occurs in the eastern fringe of the Merredin IBRA subregion within the Avon Wheatbelt IBRA region. The majority of this region intersects the Great Western Woodlands (GWW). By definition, tall eucalypt woodlands within the Study Area intersecting the GWW are specifically excluded from the definition of the Federally listed *Eucalypt Woodland of the Western Australian Wheatbelt TEC.* The communities may still, however, be regarded as the State listed *Eucalypt Woodland of the Western Australian Wheatbelt PEC (Priority 3)*.

From approximately chainage 58.5 km and in a south-easterly direction, *Eucalyptus longicornis* (Red Morrel) is the dominant tall eucalypt, growing on sandy clay soil with calcrete nodules. This is consistent with the Priority 1, Critically Endangered "Red Morrel Woodland of the Wheatbelt" PEC, also a component of the Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC.

The project unavoidably intends to clear 0.4 ha of tall eucalypt woodlands (in four patches: two patches of *Eucalyptus capillosa* woodland, two patches of *E. salmonophloia* woodland)) situated within the Merredin IBRA subregion but outside the GWW, which therefore match the description of *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.

The Project is at minor (0.4 ha) variance with this principle.

Principle (e) – Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

The Study Area lies within the eastern margin of the Merredin subregion of the Avon Wheatbelt IBRA Region. This bio-subregion and region have both been heavily cleared for agriculture.

The existing public road from Moorine Rock to Mt Holland and southwards to Forrestania already exists and the current program looks to widen the road alignment the road by 0.1m to 5m either side of the existing road alignment and to modify two intersections to cope with increased traffic. This is considered a relatively minor amount of clearing over the length of the Study Area.

The northern ~50 km of the Study Area lies within the heavily cleared agricultural zone. Here, the roadside remnant vegetation of tall eucalypt woodlands has been extensively cleared with a few standing trees remaining and very little understory intact. Most of this has been mapped as being in a Completely Degraded Condition. From ~50 km to 113 km of the Study Area, vegetation remains intact and has not been cleared, other than for existing linear infrastructure.

Within the estimated 85,600 ha contiguous uncleared native vegetation of the eastern Merredin IBRA sub-region, the proposal looks to directly clear an additional 4.79 ha, representing 0.01% of the overall.

The Project is at variance with this principle though to a relatively minor (4.79 ha) extent.

Principle (f) – Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

There are no significant ephemeral or perennial watercourses traversed by the Study Area. Drainage throughout the alignment can be maintained readily with adequately engineered culverts.

Two areas which represent lowlands in the landscape are present within the alignment. These support *Acacia acuminata* (narrow phyllode variant) (Jam Tree) tall Shrublands or Thickets and a either dense low shrub understorey of *Rinzia medifila* P1; or *Prostanthera semiteres* subsp. *semiteres, Rinzia fimbriolata* P1 and *Lepidosperma* sp. that are typical of low-lying areas with non-saline clay soils which may be subject to temporary inundation following rainfall. These 'Jam Thickets' would not be considered wetlands but are moisture-gaining sites none-the-less.

The Project is not at variance with this principle.

Principle (g) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

A well-designed road should not cause any significant indirect land degradation through either increased erosion, retention of surface waters causing temporary inundation or any significant

water starvation through surface water diversion. The proper planning and installation of culverts should address surface water flow issues.

The Project is not at variance with this principle.

Principle (h) – Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

There are no Conservation Areas (Nature Reserves) within the proposed eucalypt woodlands matching the description of the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC.*

The Project is not at variance with this principle.

Principle (i) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

The soils of the eucalypt woodlands matching the description of the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC* include (i) lateritic pizolitic gravels with underlying kaolinite on low hills supporting *Eucalyptus capillosa* woodlands and (ii) red-brown to dark red-brown sandy clay soil on broad valley floors supporting *Eucalyptus salmonophloia* woodlands.

Both of these are likely to have low infiltration rates and exhibit surface flows following rainfall events. The proper planning of cuttings and installation of culverts should address surface water flow issues.

The Project is not at variance with this principle.

Principle (j) – Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Minor clearing proposed (0.40 ha in four patches) within the eucalypt woodlands matching the description of the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC* is considered minor and unlikely to cause, or exacerbate, the incidence of flooding.

The proper planning and installation of culverts should address surface water flow issues.

The Project is not at variance with this principle.

4. Limitations

This report presents information focussing on the flora and vegetation of the eucalypt woodlands, some of which match the description of the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*. It also references the flora and vegetation of the entire Study Area. Information is valid to 29th February 2024 and based on field works within and adjacent to the Study Area extending from November 2021 to November 2023. Potential limitations of the assessment are discussed in Table 10.

Table 10. Limitations – Entire Study Area

Limitation	Discussion
Available sources of contextual information	• Desktop information on the flora and vegetation of the entire Study Area was limited. The number of vegetation associations at NVIS 5 and the complexity of flora required significant focus of resources on this project. Through use of WA Herbarium and JSTOR Global Plants websites, flora identifications were adequately resourced. This is not a Limitation for the proposal • Information on flora of the moss beds and aquatic ephemeral flora of the Wockallarry Nature Reserve is difficult to obtain. This may be a Limitation for the aquatic flora of the Wockallarry NR. This is not considered a Limitation for the assessment of vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.
The Scope of the survey	• The assessment was Scoped as a Detailed Survey meeting EPA Guidance 2016. This is not considered a Limitation for the assessment of vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.
Proportion of flora collected and identified	• All flora encountered were collected and identified using the available resources. • Quadrat establishment occurred in dry summer months in 2021-2022 and revisits of existing quadrats as well establishment of additional quadrats to gain adequate

Limitation	Discussion
	representation is acknowledged as being required and planned for the future. • It is anticipated that Indet. specimens will be recollected to advance identification and that additional flora will be encountered in future assessments within the Study Area. • A minimum of 3,226 specimens were collected and reviewed using the resources of the WA Herbarium. Of these, 392 specimens (12.2%) remain not fully identified to species level due to lack of suitable material. • The flora of the moss beds and the aquatic flora of the rock pools within the Wockallarry Nature Reserve have not been assessed in detail as yet. This is a Limitation for the overall proposal but will be addressed in the future. This is not considered a Limitation for the assessment of vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.
Completeness and further work which may be needed	• A review of vegetation associations is required and will be addressed in future assessments. • Quadrat establishment occurred in dry summer months in 2021-2022 and revisits of existing quadrats as well establishment of additional quadrats to gain adequate representation is acknowledged as being required and planned for future assessments. • It is anticipated that Indet. specimens will be recollected to advance identification and that additional flora will be encountered in future assessments within the Study Area. • Targeted surveys for all Threatened and most Priority Flora are regarded as being complete. Targeted Surveys for the following Priority Flora are not complete, and will be addressed in the future: ○ *Eucalyptus urna* subsp. *xesta* (P3) ○ *Eucalyptus polita* subsp. *ocreta* (P3)

Limitation	Discussion
	• *Both Eucalyptus urna* subsp. *xesta* (P3) and *Eucalyptus polita* subsp. *ocreta* (P3) occur outside the vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*. • Targeted surveys for some Significant Flora (Species of Interest) are acknowledged as being required, particularly *Lepidosperma* species. • Field identification of some *Phebalium* species allied to *Phebalium* aff. *brachycalyx* was difficult and a review of populations of this group is acknowledged as being required in the future. • Collection of flowering and/or fruiting material of many specimens is required in future assessments to advance the identification process. • Species of many *Lepidosperma* are proving difficult to fully identify given the lack of taxonomic treatment of this group in W.A. • Similarly, Species of many *Phebalium* are proving difficult to adequately identify given the ack of recent taxonomic treatment of this group in W.A. A review of W.A. *Phebalium* species is recommended and planned to be conducted as part of this project. • The flora of the moss beds and the aquatic flora of the rock pools within the Wockallarry Nature Reserve have not been assessed in detail as yet. This is a Limitation for the overall proposal but will be addressed in future assessments. This is not considered a Limitation for the assessment of vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.
Mapping reliability	• Mapping was conducted in a single pass operation and relied on quadrats for representative species profiles. Insufficient quadrats were established in 2021-2022 and additional

Limitation	Discussion
	quadrats, plus second-season re-scores of existing quadrats, are acknowledged as being required in future assessments. This is a Limitation for the overall proposal but will be addressed in future assessments. This is a minor Limitation for the assessment of vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.
Timing: weather, season	• Quadrat establishment occurred in dry summer months in 2021-2022 and revisits of existing quadrats as well establishment of additional quadrats to gain adequate representation is acknowledged as being required and planned for future assessments. This is a Limitation for the proposal but will be addressed in future assessments. This is considered a minor Limitation for the assessment of vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC* as some annual species would not have been prevalent at the time of assessments.
Disturbances	• Much of the flora is responsive to fires and many Priority Flora are only able to be noted following fire. Much of the Study Area is represented by long unburnt vegetation, however, many adjacent areas demonstrated a variety of fire ages. This benefited recognition and identification of many short-lived species. This is a Limitation for the entire proposal and may be addressed in future assessments if conditions are favourable for collection of appropriate material to complete identifications. • Few disturbances were observed in the areas matching the description of the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*. This means that (i) disturbance opportunists within those communities were not generally present.

Limitation	Discussion
	This is considered a minor Limitation for the assessment of vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.
Intensity	• Vegetation mapping was undertaken at a high intensity throughout most of the alignment. The species variability and turn-over in the sandplain and laterite gravel landscapes is complex and insufficient assessment here means that the S1 and S4 Vegetation Associations are noted as Complexes. • The establishment of additional quadrats in future assessments and revised mapping in these areas will address these gaps. This is a Limitation for the proposal and will be addressed in future assessments This is considered a minor Limitation for the assessment of vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*. • Significant Flora (Threatened, Priority and SOI species) recognised during the field assessments 2021 to 2023 were surveyed at very high intensity, an average of 10m between observers, throughout the Study Area and over appropriate seasonal conditions. This is not a Limitation for the proposal. • Some species have been recognised as potential new species (noted as Species of Interest, SOI within this document) and have now been fully assessed in the field. Additional collections, Targeted Surveys and taxonomic review of these species are on-going. This is not considered a Limitation for the assessment of vegetation associations matching the *Eucalypt woodlands of the WA Wheatbelt EPBC listed TEC*.

Limitation	Discussion
Resources	• Adequate resources and funds were made available by Covalent to address the agreed Scope at all times. This is not a Limitation for the proposal.
Access	• Access to the Study Area was excellent in all areas. This is not a Limitation for the proposal.
Experience levels	• The team developed and utilised for this project undertook the works in a systematic fashion and was led at all times by at least one senior botanist per team. Years of experience for each team member is addressed in the List of Participants section. • All but two team members have maintained longevity in the project, conducting surveys between Moorine Rock and Forrestania, meaning that knowledge of the flora of the region has been gained and maintained. • The use of a dynamic field herbarium and contemporaneous identification of species while field works were being implemented meant that the field teams were responsive to newly recognised significant flora in appropriate timeframes to allow assessments to be undertaken in appropriate seasonal conditions in most cases. This is not a Limitation for the proposal.

4.1. Specific Gaps in Flora Assessments for the Entire Study Area

In addition to the above, specific gaps in knowledge are noted below, and are flagged for addressing in future assessments.

- Annuals need to be addressed, particularly known Significant Species. Specifically check crab holes under Gimlets for annuals.
- Complete survey of *Eucalyptus urna* subsp. *xesta* P3, *Eucalyptus polita* subsp. *ocreta* P3 need detailed surveys along 27 km x both sides of the road.
- Spring Surveys to be done throughout the alignment.
- Field herbarium updates as required.

- *Lepidosperma* spp. to be reviewed.
- *Phebalium* spp., to be collected in seed / fruit.
- Ephemeral aquatic flora of the rock pools and the terrestrial flora of the moss beds within the Wockallarry Nature Reserve are yet to be assessed.

5. List of Participants

Staff Member	Field Surveys	Specimen Identification	Data Analysis	Report Preparation
Geoff Cockerton B.Sc. (Biology) Senior Botanist and Project Manager FB62000046, 33 years' experience	1	1	1	1
Alex Chapman Senior Botanist 30 years' experience	1	1		
Ben Eckermann B.Sc. (Hons) Senior Botanist FB62000262 23 years' experience	1	1	1	1
Bethea Loudon B.Sc. (Biol) Senior Botanist FB62000049-2 20 years' experience	1	1		
Doug Lievense B.Sc. Biology Senior Botanist FB620000351 Recent: 3 years' experience Overall, 34 years' experience	1	1	1	
Pierre-Louis de Kock B.Sc. (Biol) Senior Botanist 20 years' experience	1	1		
Dr. Nicole Dakin Ph.D. Botanist FB62000492 1 years' experience	1	1		
Eliza-Joyce Mellersh B.Sc. (Biol) Botanist 1 years' experience	1	1		
Felicity Keet B.Sc. (Biol) Botanist FB62000530 < 1 years' experience	1	1		
Gemma Grigg B.Sc. Hons. (Biol) Botanist FB62000493 5 years' experience	1	1		
Lindsay Shelton B.Sc. (Botany) Botanist FB62000496 1.5 years' experience	1	1		

Staff Member	Field Surveys	Specimen Identification	Data Analysis	Report Preparation
Melissa Mykytiuk B.Sc. (Biol) Botanist License # < 1 years' experience	**1**			
Peter Smith Dip. Ag. Botanist 20 years' experience	**1**			
Russel Smith B.Sc. License # FB62000500 20 years' experience	**1**			
Linda Dalgliesh B. Sc. Hons. (Zool) Ecologist 15 years' experience				**1**
Dr. Margaret Collins Ph.D. 30 years' experience		**1**		
Mr. Frank Obbens 20 years' experience		**1 (*Calandrinia* only)**		

6. Acknowledgements

- CAD Resources Pty Ltd is thanked for provision of iPads and CAD Services for the entire project.
- Mr Michael Hislop, WA Herbarium for review of multiple specimens including Priority Flora and Species of Interest.
- Mr. Rob Davis, WA Herbarium for review of multiple specimens.
- Mr Malcolm French, for review of *Eucalyptus* species as required.
- Dr. Margaret Collins, for extensive identification services.
- Dr. Terry McFarlane for commentary and identification of Poaceae and Asparagaceae.
- Dr. Carol Wilkins, for review and guidance on *Seringia* species.
- Mr. Bruce Maslin for commentary and guidance on *Acacia* species.
- Dr. Russell Barrett, Australian National Herbarium Canberra, for commentary and guidance on *Lepidosperma* species.
- Mr. Frank Obbens, for identification services of *Calandrinia* species.
- Dr. Rachel Binks, WA Herbarium, for commentary and guidance on genetics of Seringia species and *Eucalyptus salubris*.
- Mr. Charlie Spencer, Southern Cross for organisation of office space in Southern Cross as required in 2022.
- Mr. Peter Olde, *Grevillea* taxonomist, Sydney, is thanked for his review of some *Grevillea* species encountered in this project.
- Shire of Yilgarn, or provision of office space in Southern Cross as required in 2022.
- Palace Hotel, Southern Cross, for provision of accommodation and meals as required in 2021 to 2023.

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Appendix 1. Vegetation Condition Scale (EPA, 2016)

Table 2: Vegetation Condition Scale (adapted from Keighery 1994 and Trudgen 1988)

Vegetation Condition	South West and Interzone Botanical Provinces	Eremaean and Northern Botanical Provinces
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.	
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very Good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor		Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees and shrubs.	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

10 **Technical Guidance –** Flora and Vegetation Surveys for Environmental Impact Assessment

Appendix 2. Western Botanical (2023a) Desktop Review of Flora and Vegetation: Moorine Rock to Mount Holland Minesite Road Alignment.

Western Botanical

Desktop Review of Flora and Vegetation: Moorine Rock to Mount Holland minesite

Prepared for: Covalent Lithium Pty. Ltd. and Shire of Yilgarn

Report Ref: WB999



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1.2 Amendments to Introduction and Executive Summary, including Shire of Yilgarn as a Proponent	B. Jeanes, G. Cockerton	6th June 2023	6th June 2023
1.2.1 Amendment to Title of report	B. Jeanes, G. Cockerton	8th June 2023	8th June 2023

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1. Executive Summary

The Shire of Yilgarn is undertaking a road upgrade and maintenance works south and south-west of the townships of Southern Cross and Marvel Loch. This includes realignments and sealing of Stubbs Street and Parker Range Road south of Moorine Rock, the newly constructed Parker Range Road diversion around the Mt Caudan minesite and a section of the Marvel Loch to Forrestania Road from the Parker Range Road intersection to the Mt Holland minesite. The realignment, widening and sealing is required due to anticipated increase in traffic as a result of expanded mining operations within the area.

Covalent commissioned Western Botanical to conduct a Detailed Assessment of the flora and vegetation of the proposed Mt Holland Logistics Haul Road (hereafter referred to as the Study Area). As part of this, a desktop review was implemented to provide contextual information, particularly regarding flora and vegetation of conservation significance, prior to the completion of extensive floristic survey of the route. The Study Area is approximately 115 km in length and 10,914 ha in size. In the area adjacent to freehold land (cleared agricultural area) the Study Area is 200 m wide extending to a 1 km diameter in areas of native vegetation. The Study Area lies entirely within the Shire of Yilgarn.

The Study Area intersects two bioregions (Avon Wheatbelt and Coolgardie) and lies within the Merredin and Southern Cross subregions of these bioregions respectively. The Merredin subregion has been extensively cleared for agricultural use with only ~21% of pre-European vegetation remaining. The Coolgardie subregion currently retains ~96% of its pre-European vegetation. Approximately 46 km of the Study Area along the northern portion of the Parker Range Road is located adjacent to cleared (freehold) agricultural land, with narrow roadside remnants. The remainder of the Study Area is located within the western boundary of the Great Western Woodlands with extensive native vegetation either side of the alignment. The Study Area intersects the Wockallarry Nature Reserve and the Jilbadgi Nature Reserve.

Within the region, monthly rainfall peaks from late autumn throughout winter with an average annual rainfall of 292.8 mm. Thirteen soil landscape zones are intersected by the Study Area with the majority of the area occurring on gently sloping to gently undulating plateau areas, or uplands (on granites, gneisses, and allied rocks) and undulating sandy plains with small salt lakes or clay pans.

Three hydrographic sub-catchments of the Avon River Basin are traversed by the Study Area; Lake Julia (northern end of Study Area), Yellowdine (mid-section) and Lake Eva (southern end). The Department of Water and Environmental Regulation groundwater salinity database indicates groundwater salinities in the area range predominantly from 14,000 mg/L to 35,000 mg/L (highly saline), the exception being where paleochannels are intercepted (>35,000 mg/L; brine) around the Moorine Rock townsite and a section of the Study Area extending approximately 7.8 km south along the Marvel Loch-Forrestania Road (from the Parker Range Road intersection).

The flora of this region is incredibly diverse and subject to continual taxonomic and conservation status review. Database searches (state and national) and a literature review indicate 126 flora taxa of conservation significance have been recorded (or may occur) within a 50 km radius of the Study Area. Twenty taxa of conservation significance (one Threatened, five Priority 1, four Priority 2, nine Priority 3 and one Priority 4) have been recorded within the boundary of the Study Area with an additional 66 taxa (three Threatened, 24 Priority 1, eight Priority 2, 20 Priority 3 and 11 Priority 4) assessed as having the potential to occur within the Study Area.

The Study Area is located within the mapped buffer zones of three ecological communities of conservation significance;

- 'Ironcap Hills vegetation assemblages (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill) (banded ironstone formation)' Priority Ecological Community (PEC) (Priority 3);
- 'Plant Assemblages of the Parker Range System' PEC (Priority 3); and
- 'Eucalypt Woodland of the Western Australian Wheatbelt' PEC (Priority 3). This PEC is synonymous with the Commonwealth listed Threatened Ecological Community (TEC) under the *EPBC Act* (DBCA, 2022d).

Three Environmentally Sensitive Areas are present within the Study Area;

- the Jilbadgi Nature Reserve which is listed on the Register of the National Estate.
- the region of roadside vegetation within 50 m of the Threatened flora species *Banksia dolichostyla*. This species is present adjacent to the roadside from about the intersection of King Ingram Road southwards to the turnoff into the Mt Holland minesite.
- the Commonwealth listed 'Eucalypt Woodland of the Western Australian Wheatbelt' TEC under the *EPBC Act.*

2. Introduction

2.1. Project Background

The Shire of Yilgarn is undertaking a road upgrade and maintenance works south and south-west of the townships of Southern Cross and Marvel Loch. This includes realignments and sealing of Stubbs Street and Parker Range Road south of Moorine Rock, the newly constructed Parker Range Road diversion around the Mt Caudan minesite and a section of the Marvel Loch to Forrestania Road from the Parker Range Road intersection to the Mt Holland minesite. The realignment, widening and sealing is required due to anticipated increase in traffic as a result of expanded mining operations within the area.

Covalent Lithium Pty. Ltd. (Covalent) plan to develop the Earl Grey Lithium Project (EGLP) which comprises an open cut mine and concentrator located at the former Mt Holland Gold Mine (previously the Bounty Gold Operation), located approximately 105 km south of Southern Cross (Figure 1) and a refinery within the industrial area of Kwinana. Ore will be transported to the refinery by road, necessitating the realignment, widening and sealing of a section of the existing public road, the Marvel Loch – Forrestania Road and Parker Range Road, to allow haulage access to Great Eastern Highway.

The road design and construction is being managed by the Shire of Yilgarn while Covalent is funding and managing the biological assessments to support Clearing Permits under the Environmental Protection Act (1986) for the road upgrade.

Covalent commissioned Western Botanical to conduct a Detailed Assessment of the flora and vegetation of the proposed Mt Holland Logistics Haul Road (hereafter referred to as the Study Area). As part of this, a desktop review was implemented to provide contextual information, prior to the completion of extensive floristic surveys. The Study Area is approximately 115 km in length and 1 km in width where remnant or uncleared native vegetation is present. Within the cleared agricultural area, the Study Area is restricted to a width of up to 200 m. It total, the Study Area is approximately 10,914 ha in size and extends along the Marvel Loch – Forrestania Road (from the intersection of the Mt Holland mine access road) onto the Parker Range Road, culminating at the intersection of Great Eastern Highway, immediately west of the Moorine Rock townsite (Figure 2). The Moorine Rock Siding load-out area is also included. The Study Area lies entirely within the Shire of Yilgarn (Figure 1).

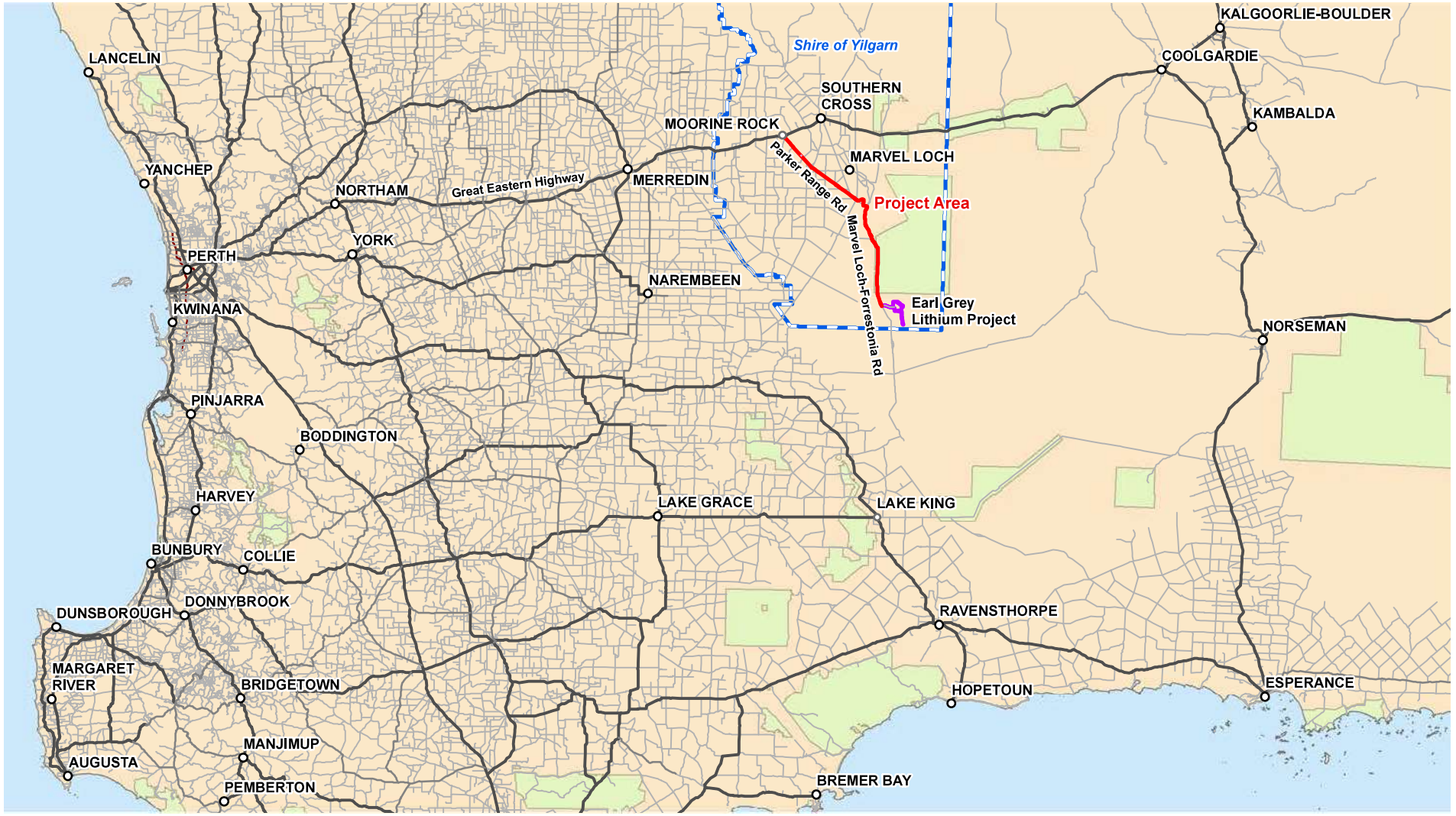
The objective of the desktop review was to provide contextual information on the Study Area prior to completion of field surveys. This was achieved through a literature review of flora and vegetation assessments previously conducted within the vicinity of the Study Area in addition to a search of various State and Commonwealth databases to identify known flora and vegetation of conservation significance.

2.1. Land Use

The Study Area includes the Parker Range Road in its entirety and a section of the Marvel Loch – Forrestania Road, both of which are Crown land. The Study Area extends approximately 500 m either side of these roads into remnant or uncleared native vegetation (where present) in unallocated Crown land or nature reserves (Wockallarry Nature Reserve and Jilbadgi Nature Reserve). In the cleared agricultural area, the Study Area lies adjacent to freehold land and has generally narrow roadside remnants.

Figure 1. Location of the Study Area

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade - Locality



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_01, Rev: A

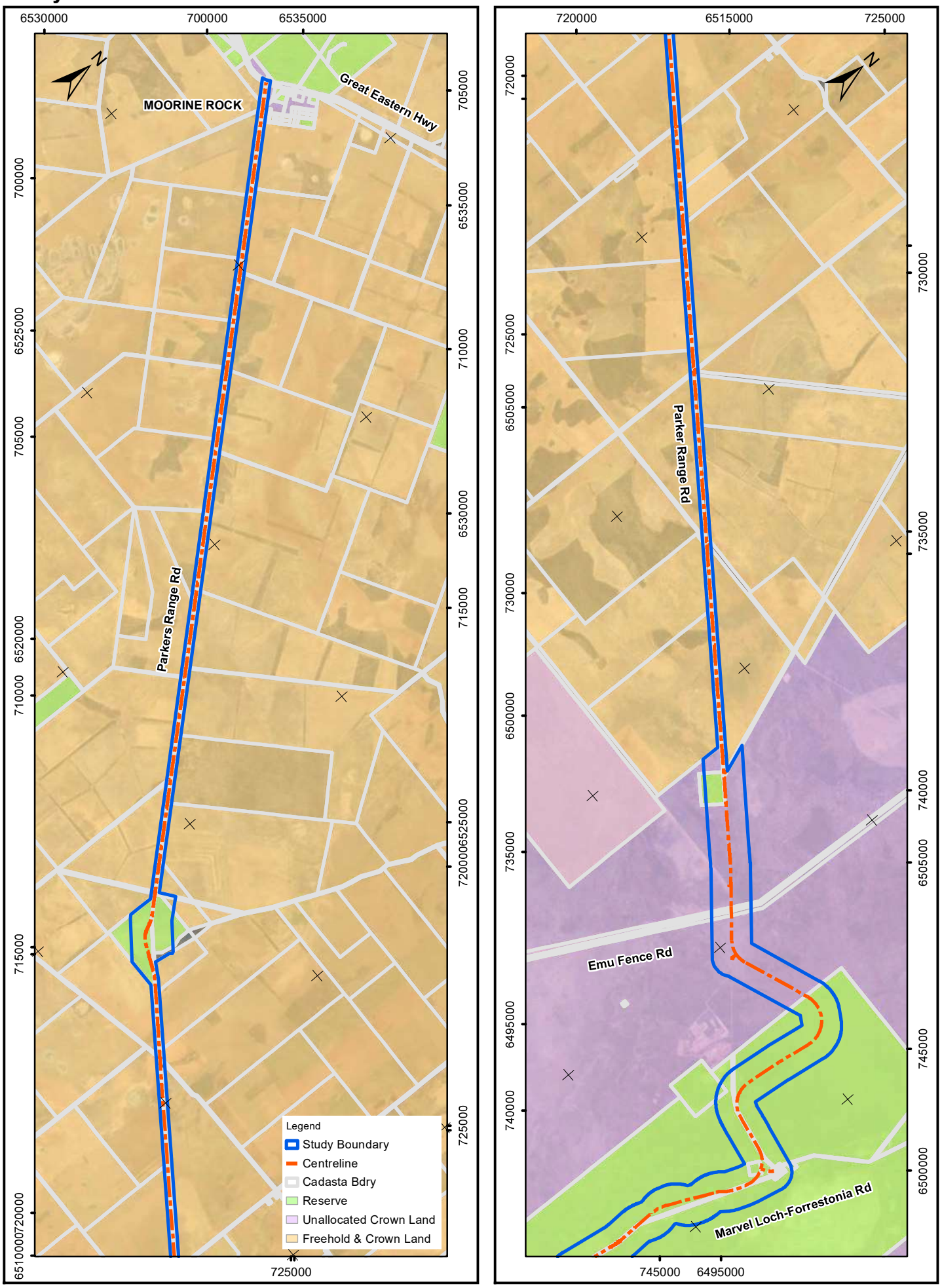
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0 50 km

Scale: 1:3,000,000
MGA94 (Zone 50)

Figure 2. Study Area with Cadastre

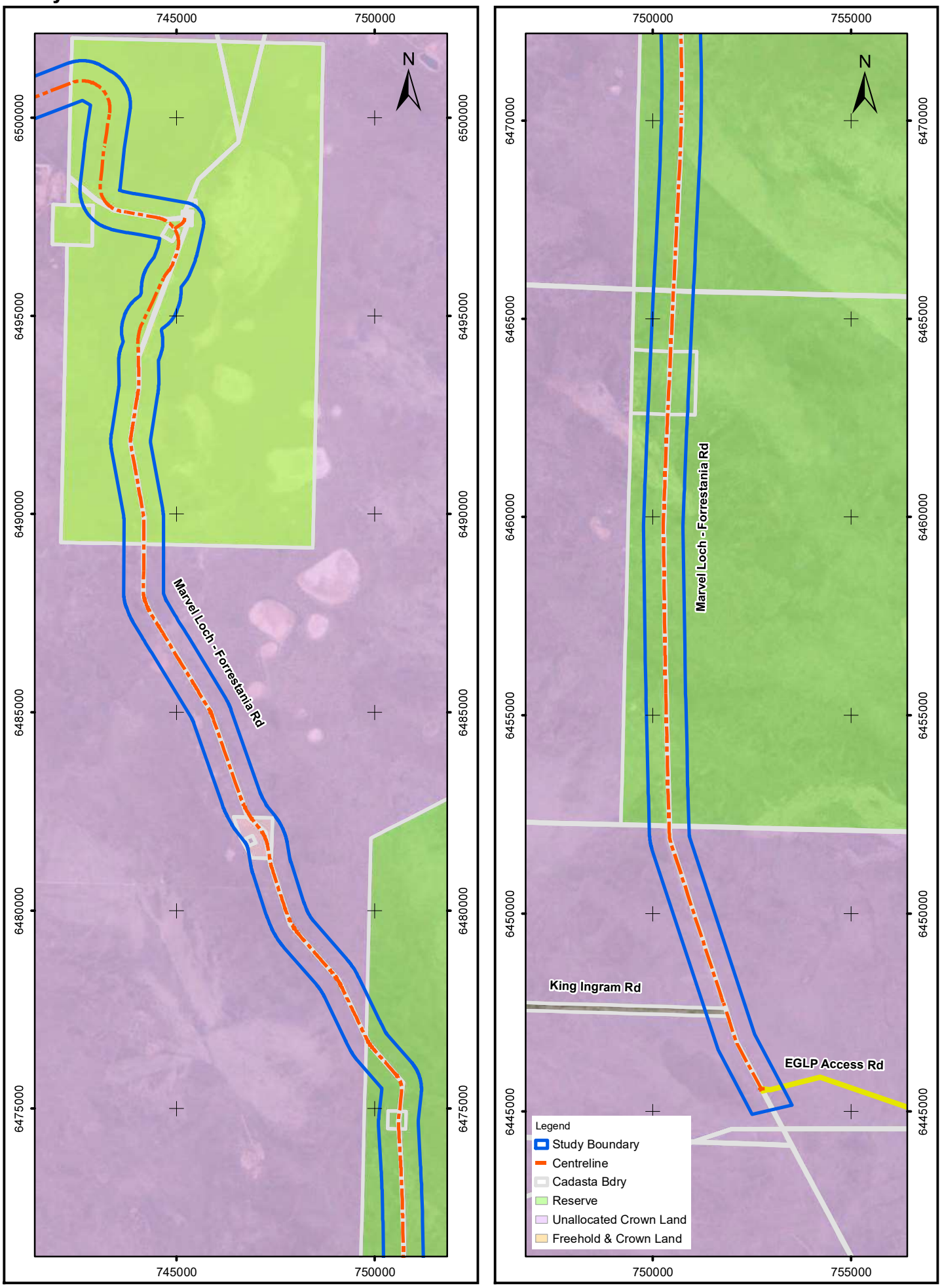
Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Study Area - Sheet 1 of 2



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_02_01, Rev: A
Scale 1:125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate

0 3km

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Study Area - Sheet 2 of 2



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_02_02, Rev: A
Scale 1125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate

2.2. Physical Environment

2.2.1. Climate

The Study Area is in a semi-arid (dry) warm Mediterranean climate (Beecham, 2001). Average annual rainfall is 292.8 mm, as recorded at the Bureau of Meteorology (BoM) Southern Cross weather station (number 012074), located approximately 105 km to the north of the Study Area. Although closed in 2007, this weather station provides the largest relevant climate dataset (1889 – 2007) for the Study Area. The Southern Cross Airfield weather station now provides climatic data for the region. Average monthly rainfall peaks from late autumn throughout winter (May–August), with the highest average rainfall occurring in June (40.7 mm). Mean maximum daily temperatures range from 16.3 °C in July to 34.5 °C in January with mean minimum temperatures ranging from 4.4 °C in July to 14.2 °C in January/February (Figure 3) (BoM, 2023a).

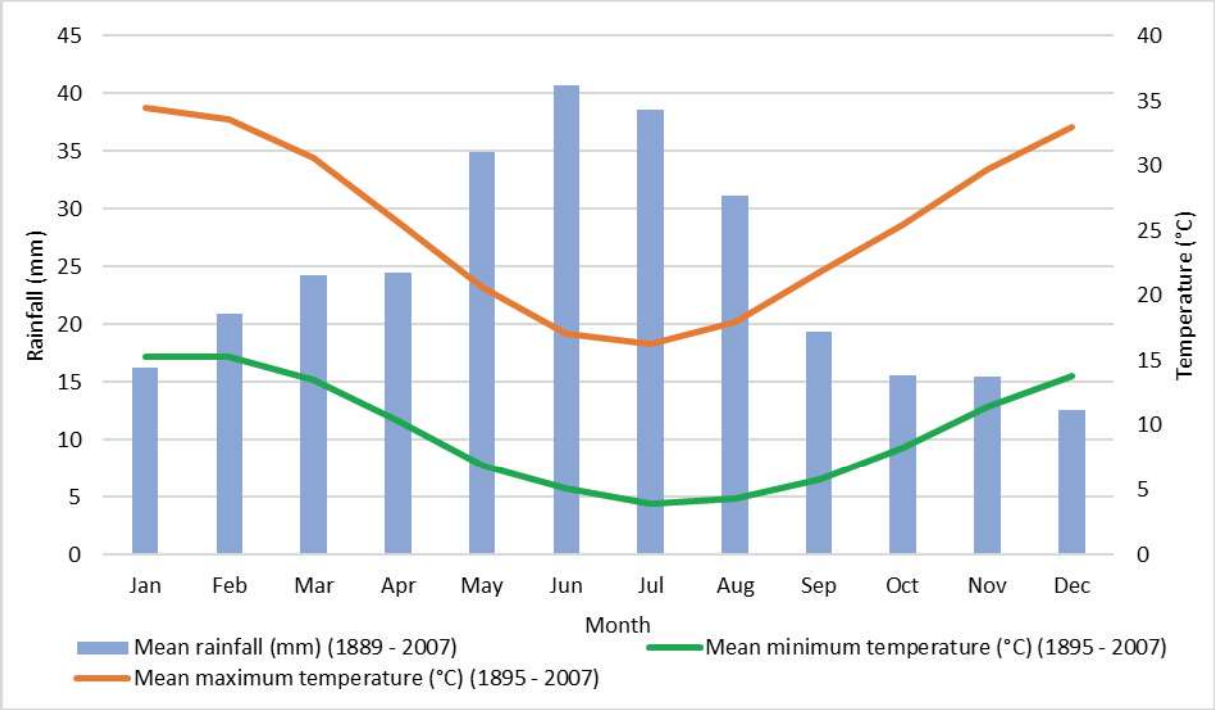


Figure 3. Long-term average climate data for Southern Cross (weather station number 012074) (1889 – 2007) (BoM, 2023a).

2.2.2. Geology

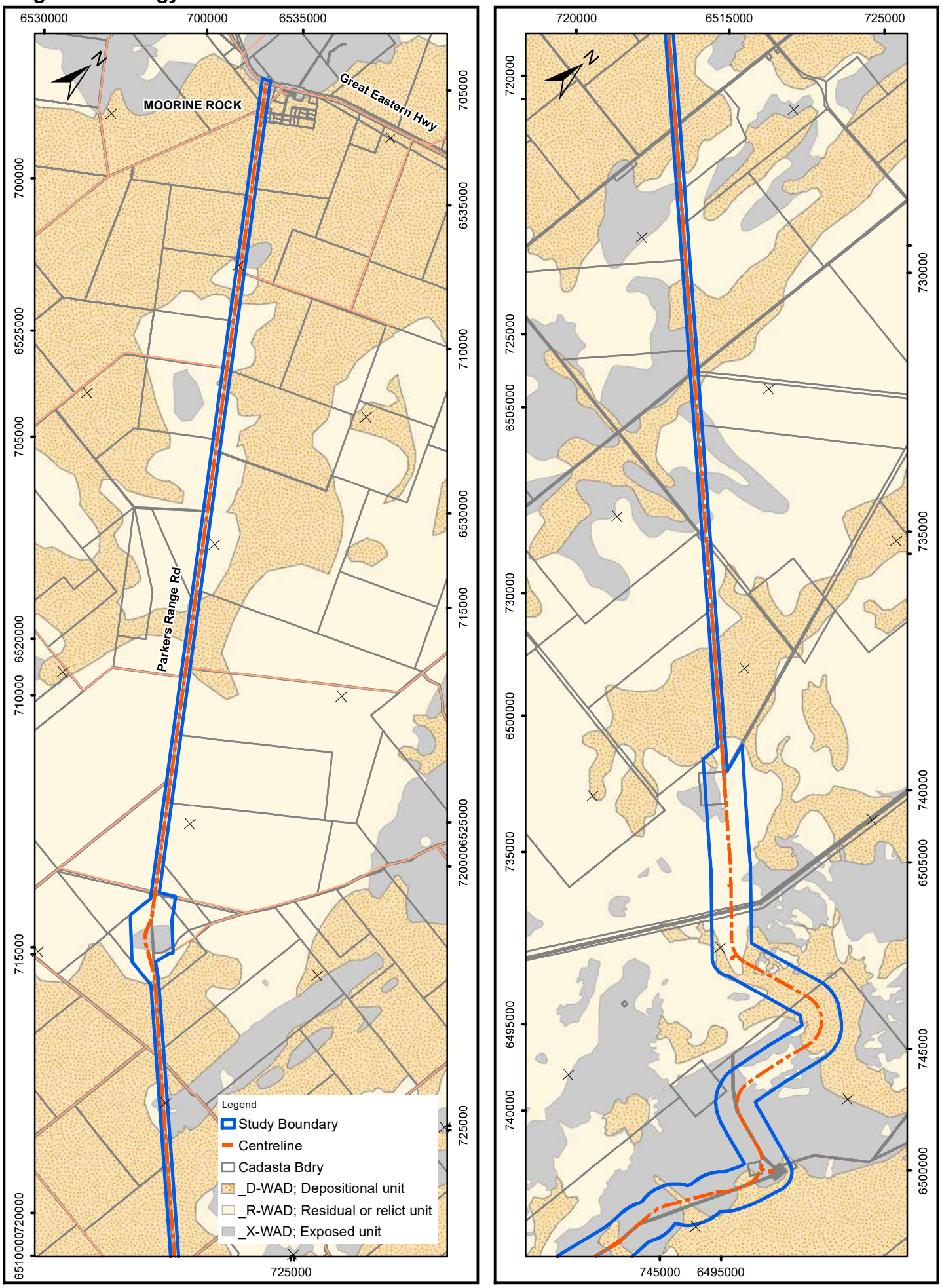
The Study Area lies within the southern section of the Archaean Southern Cross-Forrestania Greenstone Belt, which extends over 300 km in Western Australia (WA). The Study Area traverses seven bedrock and three regolith geological units (Table 1, Figure 4).

Table 1. Geology of the Study Area (DMIRS, 2018a, 2018b)

Code	Name	Description
Bedrock Geology		
A-mgss-Y	Yilgarn Craton granites	Foliated metagranite, locally gneissic; may include amphibolite lenses; includes deeply weathered rock
A-mw-YYO	Youanmi Terrane greenstones	Metamorphosed mafic igneous rock, undivided
A-s-YYO		Clastic sedimentary rock dominant; metamorphosed
A-md-YYO		Metasedimentary rock, undivided; includes metamorphosed sandstone, siltstone, shale, and chert; commonly deeply weathered
A-mu-YYO		Metamorphosed ultramafic rock, undivided; typically deeply weathered
A-xmuk-mi-YYO		Metakomatiite, metachert, and metamorphosed banded iron-formation
A-SDB-mg	Big Bell Suite	Metagranite; commonly foliated; includes granodiorite to monzogranite
Regolith Geology		
D		Sediments derived from residual or erosional landforms, which includes colluvial, sheetwash, alluvial, lacustrine, sandplain, eolian and marine deposits
X		Exposed bedrock outcrops, saprolite, and saprock
R		Residual or relict material; includes ferruginous, siliceous, and calcareous duricrust

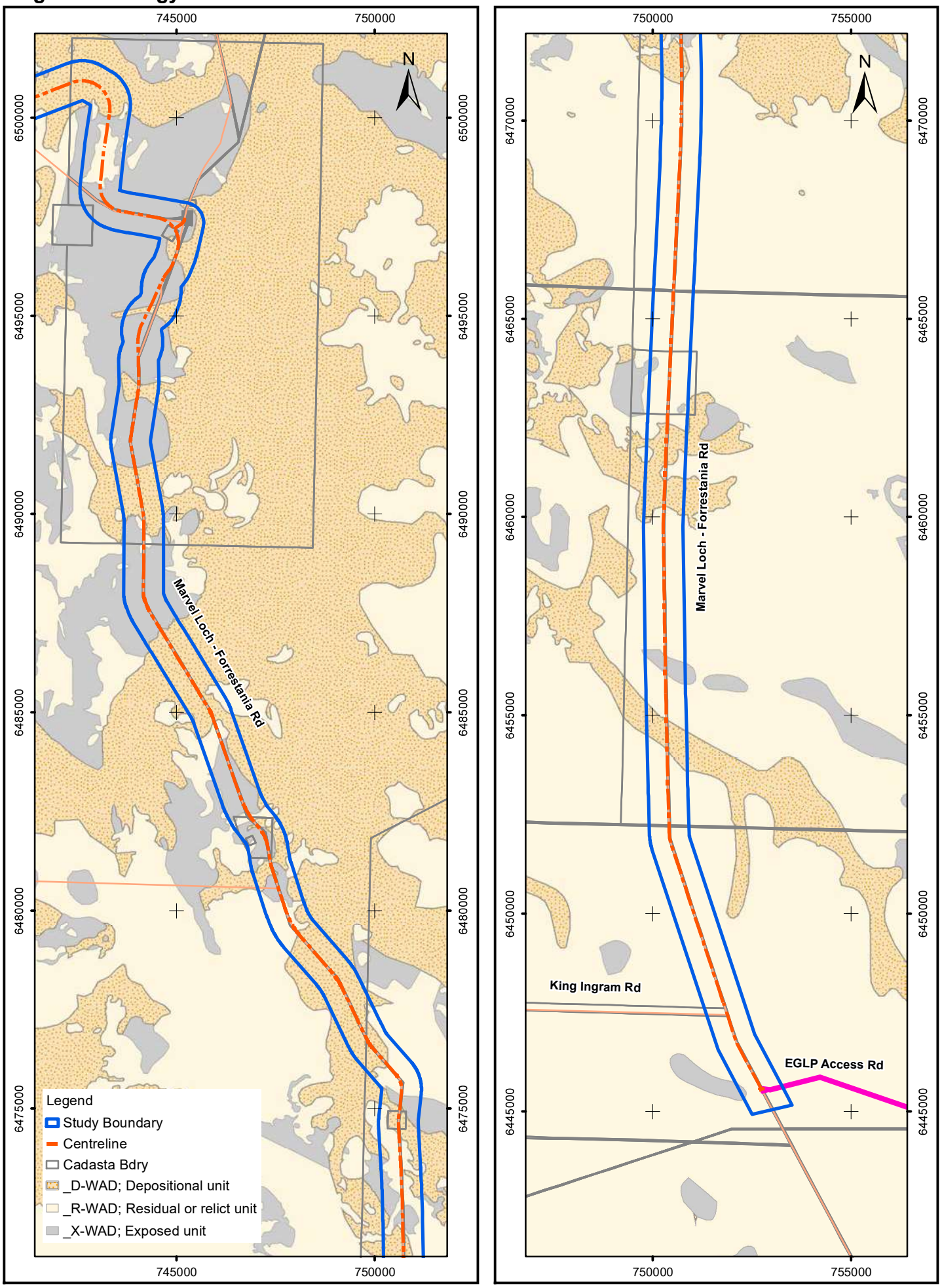
Figure 4. Regolith Geology of the Study Area.

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Regolith Geology - Sheet 1 of 2



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_07_01, Rev: A
Scale 1:125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, Geology: DMIRS

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Regolith Geology - Sheet 2 of 2



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_07_02, Rev: A
Scale 1125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, Geology: DMIRS

2.2.3. Soil Landscape Zones

Soil landscape mapping of WA has been completed by the Department of Primary Industries and Regional Development (DPIRD) through the compilation of various surveys at differing scales (varying from 1:20,000 to 1:3,000,000). The mapping conforms to a nested hierarchy which was established to manage the varying scales and subsequent levels of information evident across the surveys (DPIRD, 2023a). The Study Area is located across 13 soil landscape zones, as presented in Table 2 and Figure 5. Dominant soil landscape zones include the AC1 atlas system (~ 40% of the Study Area), DD15 atlas system (~19%) and the Ya28 atlas system (~15%).

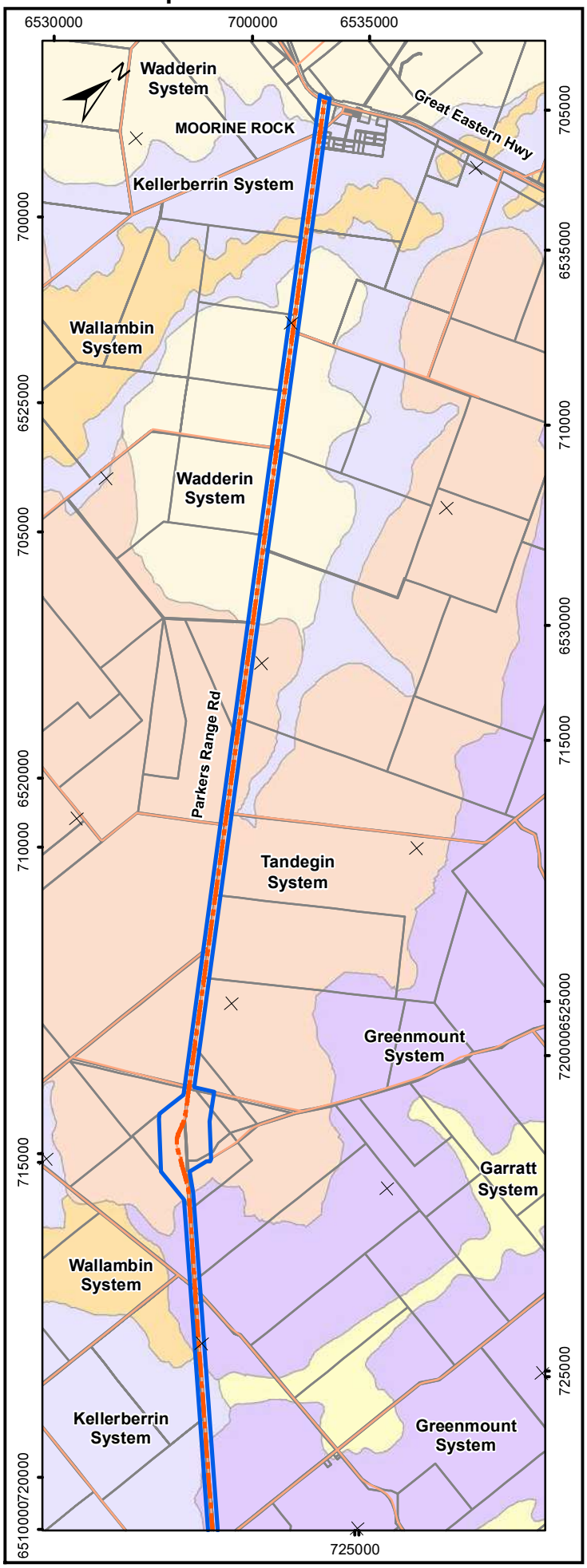
Table 2. Soil landscape zones of the Study Area (DPIRD, 2023a)

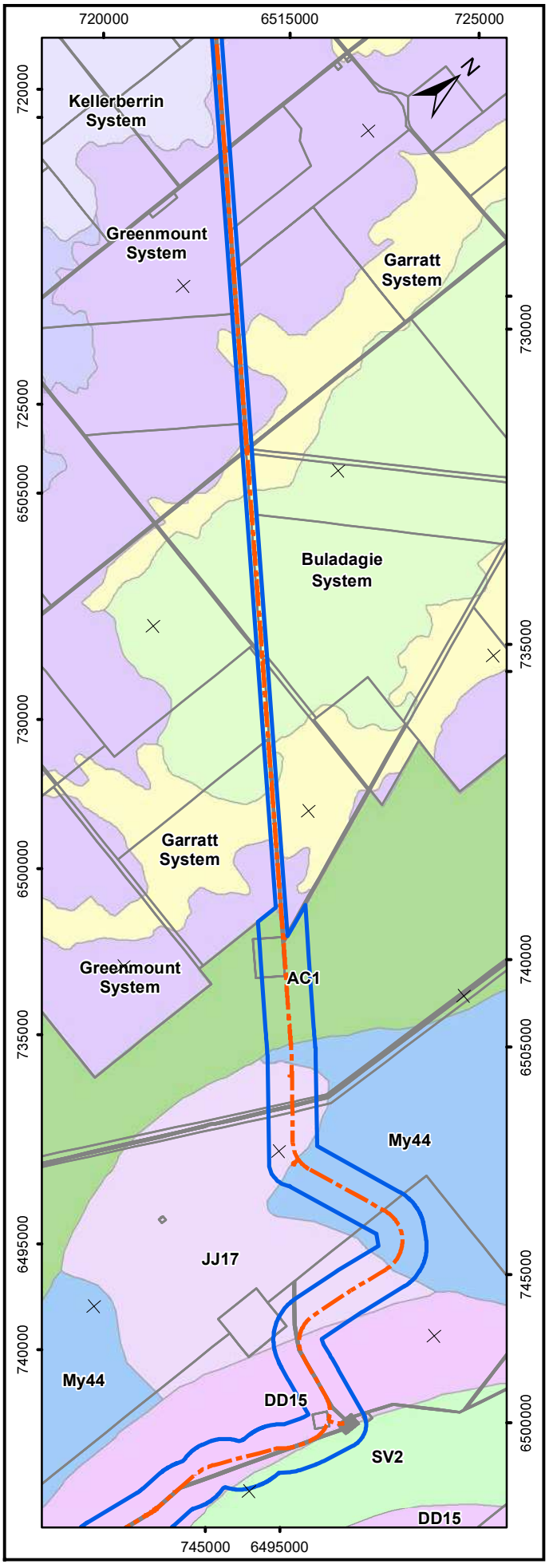
Map unit name	Description	Area (ha)	% of Study Area
Buladagie system	Gently undulating upland plains and subdued rises in the Eastern Zone of Ancient Drainage. 'Fresh' red rocky loams, yellow sands and sandy earths and shallow duplexes.	122.50	1.55
Garratt system	Lower slopes and footslopes adjacent to salt lakes in the eaten Zone of Ancient Drainage. Loamy earth (mostly calcareous), hard cracking clay and alkaline shallow duplex.	59.24	0.75
Greenmount system	Gently undulating rises to rolling low hills in the eastern Zone of Ancient Drainage. Loamy earth (mostly red, calcareous and clayey and stoney.	254.64	3.24
Kellerberrin system	Valley floors, in the central Zone of Ancient Drainage, with alkaline red shallow loamy duplex, alkaline grey sandy duplexes mainly in branch valleys (shallow and deep), calcareous loamy earth and hard cracking clay. Salmon Gum-Gimlet-Wandoo Woodlands.	82.32	1.04
Tandegin system	Sandplain dominated interfluves with weakly indurated lateritised crests and upper slopes and long colluvial yellow sandplain upper to lower slopes. Unlateritised surfaces dominated by sodic and alkaline duplex soils.	380.09	4.84
Wadderin system	Gently undulating rises on mixed gniessic terrain largely stripped of lateritic mantles with sandy duplexes and some sands and gravels, vegetated by Mallee and Kwongan heath.	168.11	2.13
Wallambin system	Salt lake chains, in the central Zone of Ancient Drainage, with salt lake soil and calcareous loamy earth. Mallee, Morrel woodland and saltbush-bluebush-samphire flats.	6.89	0.09
AC1 atlas system	Gently sloping to gently undulating plateau areas, or uplands, on granites, gneisses, and allied rocks, with long gentle slopes and, in places, abrupt erosional scarps.	3,173.29	40.33
DD15 atlas system	Undulating plains with some low dunes, seasonal lakes, and clay pans.	1,530.23	19.44
JJ17 atlas system	Small ranges of metasediments (whitestones), some rock outcrops.	442.51	5.62

Map unit name	Description	Area (ha)	% of Study Area
My44 atlas system	Undulating ridge and low hilly terrain with some mesas and buttes and small valley plains.	391.34	4.97
SV2 atlas system	Saline valleys with some dunes including barchan forms--salt lake channels, mostly devoid of true soils, and their fringing areas	106.34	1.35
Ya28 atlas system	Sandy plains with some clay pans and small salt lakes, dunes, and lunettes	1,152.18	14.65
	Total	7,869.68	100

Figure 5. Soil Landscapes of the Study Area.

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Soil Landscapes - Sheet 1 of 2

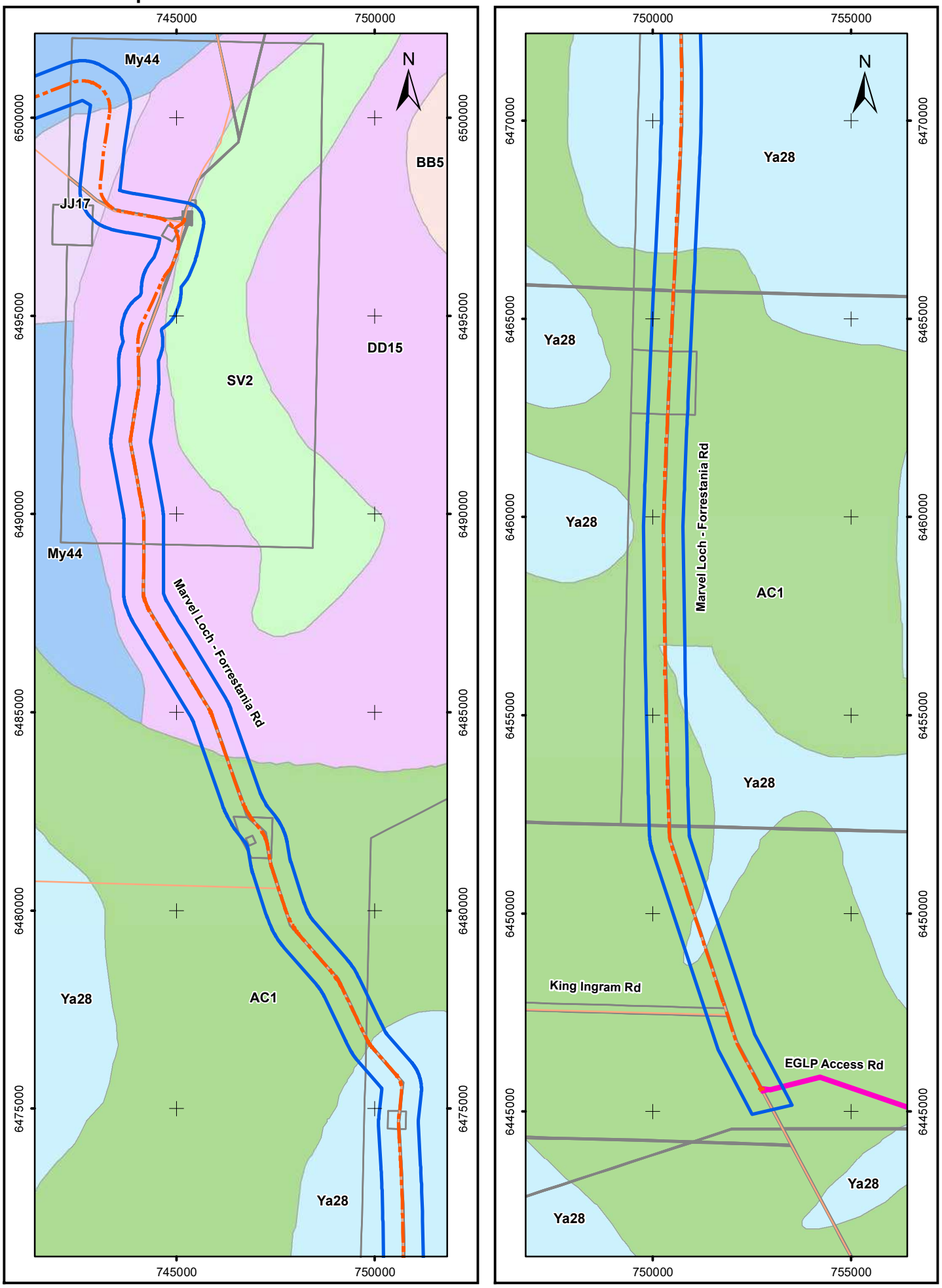




Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_03_01, Rev: A
Scale 1:125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, Landsystems: DPIRD

0 3km

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Soil Landscapes - Sheet 2 of 2



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_03_02, Rev: A
Scale 1125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, Landsystems: DPIRD

2.2.4. Hydrology and Hydrogeology

The Study Area is located across two hydrological zones;

- Northern Zone of Ancient Drainage: an ancient plain of low relief and lateritic uplands on weathered granite. Ranges and stony plains occur in the north-east. No connected drainage is present. The remnant salt lake chains occur in ancient drainage systems which flow only in very wet years (DPIRD, 2023b). The northern end of the Study Area (up to just south of Wockallarry Nature Reserve) falls within this zone.
- Southern Cross Zone: comprises rises and low hills on Archaean greenstones, with broad valleys often containing salt lake chains. Soils are usually red, loamy to clayey and calcareous (DPIRD, 2023b). Majority of Study Area is located within this zone.

The Study Area is located within the Avon River Basin in the Swan Avon/Yilgarn hydrographic catchment. It traverses the Lake Julia, (northern end of Study Area), Yellowdine (mid-section) and Lake Eva (southern end) hydrographic sub-catchments (DPIRD, 2023b).

The Department of Water and Environmental Regulation (DWER) groundwater salinity database (DWER, 2023a) indicates groundwater salinities in the Study Area range predominantly from 14,000 mg/L to 35,000 mg/L (highly saline). Where the Study Area intersects paleochannels associated with salt lake chains, groundwater salinity is >35,000 mg/L (brine). This occurs at two locations; the northern end of the Study Area (3.4 km in length) around the Moorine Rock townsite; and a section of the Study Area extending approximately 7.8 km south along the Marvel Loch-Forrestania Road from the Parker Range Road intersection (DWER, 2023a). Surface flow in these areas occurs only in periods of high rainfall.

2.3. Biological Environment

2.3.1. Interim Biogeographic Regionalisation of Australia (IBRA)

The Study Area intersects the Merredin subregion (AVW-01) of the Avon Wheatbelt bioregion and the Southern Cross subregion (COO-02) of the Coolgardie bioregion;

- Merredin subregion (AVW-01) is 6,566,022 ha in size and occurs within the Avon Wheatbelt bioregion. The bioregion is an area of active drainage dissecting a Tertiary plateau in Yilgarn Craton. The gently undulating landscape of low relief supports proteaceous scrubheaths on residual lateritic uplands and derived sandplains; mixed eucalypt, *Allocasuarina huegeliana* and Jam-York Gum woodlands on Quaternary alluvials and eluvials. The Merredin subregion is characterised as an ancient peneplain with low relief and no connected drainage. The salt lakes present occur as remnants of ancient drainage systems that now only function in very wet years. Lateritic uplands are dominated by yellow sandplain (Beecham, 2001). Approximately 20.96% of pre-European vegetation (see Section 2.3.2) currently remains within this subregion, of which only 1.4% is protected (reserved) for conservation (DBCA, 2018).

- Southern Cross subregion (COO-02) is 7,041,232 ha in size and occurs within the Coolgardie bioregion. The subregion comprises gently undulating uplands dissected by broad valleys with bands of low greenstone hills. It lies on the 'Southern Cross Terrains' of the Yilgarn Craton. The granite strata of Yilgarn Craton are interrupted by parallel intrusions of Archaean Greenstone. Drainage is occluded. Valleys have Quaternary duplex and graduational soils, and include chains of saline playa-lakes. Dominant vegetation includes:
    - diverse *Eucalyptus* woodlands (*Eucalyptus salmonophloia, E. salubris, E transcontinentalis, E. longicornis*) around salt lakes, on the low greenstone hills, valley alluvials and broad plains of calcareous earths;
    - dwarf shrublands of samphire on salt lake surfaces;
    - swards of *Borya constricta*, with stands of *Acacia acuminata* and *Eucalyptus loxophleba* on granite basement outcrops at mid-levels in the landscape; and
    - Mallees (*Eucalyptus leptopoda, E. platycorys* and *E. scyphocalyx*) and scrub-heaths (*Allocasuarina corniculata, Callitris preissii, Melaleuca uncinata* and *Acacia beauverdiana*) on uplands of yellow sandplains, gravelly sandplains and laterite breakaways as well as on sand lunettes associated with playas along the broad valley floors, and sand sheets around the granite outcrops (Cowan *et al*., 2001).

  Approximately 96.06% of pre-European vegetation remains within this subregion, of which 16.21% is protected (reserved) for conservation (DBCA, 2018).

2.3.2. Pre-European Vegetation

The pre-European vegetation mapping of Western Australia dataset maps the original native vegetation presumed to have existed prior to European settlement. It is based predominantly on the published and unpublished mapping of J.S. Beard. The first broad-scale vegetation mapping of Western Australia was conducted by Beard in 1979 with several revisions and updates resulting in the most recent and comprehensive iteration, detailed in Beard *et al*. (2013).

J.S. Beard describes thirteen vegetation system associations across the Study Area (Table 3, Figure 6). Statistics on the pre-European and current extent of the Beard vegetation associations of WA has been jointly developed by the DBCA and DWER. These statistics are used in the assessment of development applications and both conservation and land use planning. Based on the 2018 State-wide Vegetation Statistics (DBCA, 2018), a summary of the regional extent (State and Bioregion) of the pre-European vegetation associations present in the Study Area, is presented in Table 3 . It should be noted that the two vegetation associations that extend across both bioregions (Skeleton Rock_1068 and Skeleton Rock _2048), have not had proportions within each bioregion calculated but rather the total extent of the association in the Study Area is compared against the bioregion extent.

The dominant pre-European vegetation system associations are Eucalypt woodlands or mallee and include Parker_1068 which accounts for approximately 41% of the Study Area vegetation, Skeleton Rock_519 (11%) and Skeleton Rock_1068 (8%). The Parker_1068 vegetation

association has approximately 88% of its pre-European extent remaining (both at a State and Avon Wheatbelt bioregion level). The Skeleton Rock_519 association has approximately 83% of its extent remaining state-wide, and 99% remaining within the Coolgardie Bioregion. The Skeleton Rock_1068 vegetation association has a more restricted distribution across the State and has been subject to land clearing with approximately 54% of it's extent remaining state-wide and only 31% within the heavily cleared Avon Wheatbelt bioregion. Its occurrence within the Coolgardie Bioregion remains relatively undisturbed.

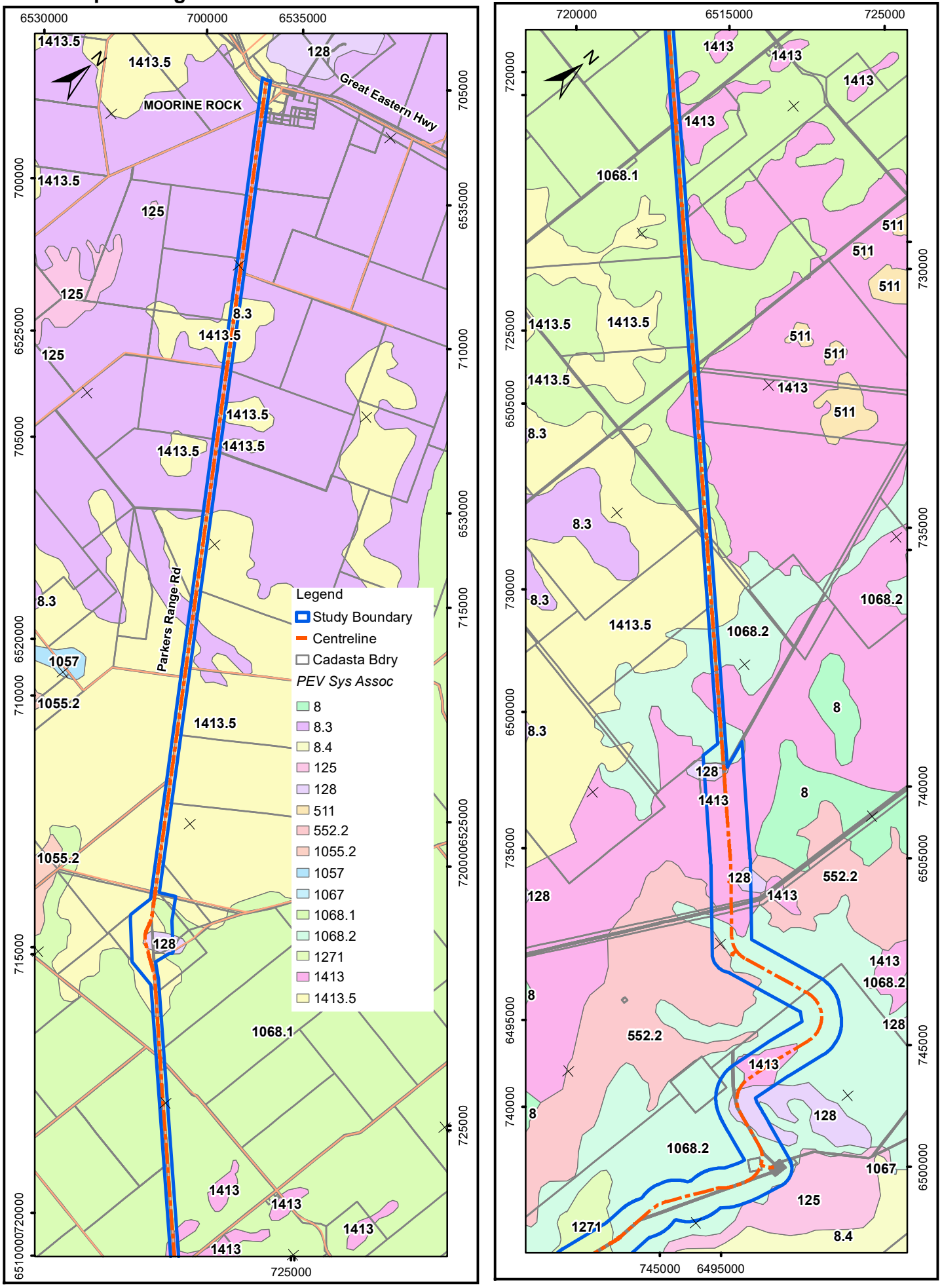
Table 3. Pre-European vegetation system associations of the Study Area.

Veg. System	Veg. Assoc.	SA Code	Description	Scale	Pre-European extent (ha)	Current extent (ha) and % remaining	Extent in Study Area (ha)	% within Study Area
Boorabbin	125	12.0	Salt lake, lagoon, clay pan	State	40,718.13	38,198.82 93.81%	11.12	0.03
				Coolgardie Bioregion	40,607.50	38,088.19 93.80%		0.03
Moorine Rock	8	8.3	Wheatbelt; York gum, salmon gum etc. *Eucalyptus loxophleba, E. salmonophloia.*	State	328.471,35	50,671.62 15.43%	180.84	0.36
				Avon Wheatbelt Bioregion	319,538.96	45,102.86 14.11%		0.40
Moorine Rock	128	128	Bare areas; rock outcrops	State	18,899.94	12,072.08 63.87%	212.25	1.76
				Avon Wheatbelt Bioregion	16, 893.33	10,486.75 62.08%		2.02
Moorine Rock	1413	1413.5	Wattle, casuarina and teatree acacia-allocasuarina-melaleuca alliance.	State	337,732.5	130,897.47 38.76 %	436.37	0.33
				Avon Wheatbelt Bioregion	319,735.46	117,911.42 36.68%		0.37
Parker	552	552.2	Wattle, casuarina and teatree acacia-allocasuarina-melaleuca alliance.	State	11,607.85	11,264.18 97.04%	47.69	0.42
				Avon Wheatbelt Bioregion	9,734.59	9,650.55 99.14%		0.49
Parker	1068	1068.2	Wheatbelt; York gum, salmon gum etc. *Eucalyptus loxophleba, E. salmonophloia.*	State	68,472.57	60,251.74 87.99%	3,212.31	5.33
				Avon Wheatbelt Bioregion	32,713.01	28,704.70 87.75%		11.19
Parker	1271	1271	Salt lake, lagoon, clay pan	State	836.38	834.09 99.73%	147.37	17.66
				Avon Wheatbelt Bioregion	836.38	834.09 99.73%		17.66

Veg. System	Veg. Assoc.	SA Code	Description	Scale	Pre-European extent (ha)	Current extent (ha) and % remaining	Extent in Study Area (ha)	% within Study Area
Parker	1413	1413	Wattle, casuarina and teatree acacia-allocasuarina-melaleuca alliance.	State	11,973.24	6,807.73 56.86%	543.61	7.98
				Avon Wheatbelt Bioregion	8,495.70	4,207.79 49.53%		12.91
Skeleton Rock	519	519.4	Eucalypt shrubland, *Eucalyptus eremophila, E. redunca, E.* spp.	State	156,242.20	129,453.91 82.85%	865.05	0.66
				Coolgardie Bioregion	56,013.48	55,381.93 98.87%		1.56
Skeleton Rock	1068	1068	Wheatbelt; York gum, salmon gum etc. *Eucalyptus loxophleba, E. salmonophloia.* Goldfields; gimlet, redwood etc. *E. salubris, E. oleosa.*	State	30,139.71	16,201.48 53.75%	659.43	4.07
				Avon Wheatbelt Bioregion	20,061.11	6,125.85 30.54%		10.76
				Coolgardie Bioregion	10,041.81	10,040.54 99.99%		6.56
Skeleton Rock	1148	1148.3	Mixed heath with scattered tall shrubs *Acacia* spp., Proteaceae and Myrtaceae.	State	5,276.00	5,274.51 99.97%	630.82	11.95
				Coolgardie Bioregion	5,259.05	5,257.56 99.97%		11.99
Skeleton Rock	2048	2048.2	Mixed heath with scattered tall shrubs *Acacia* spp., Proteaceae and Myrtaceae.	State	82,634.67	65,590.71 79.37%	619.19	0.94
				Coolgardie Bioregion	2017.49	2017.49 100%		30.68
				Avon Wheatbelt Bioregion	158.95	115.88 72.90%		100
Yilgarn	1068	1068.1	Medium Woodland. Wheatbelt; York gum, salmon gum etc. *Eucalyptus loxophleba, E. salmonophloia.*	State	89,909.33	23,811.59 26.48%	303.63	1.27
				Avon Wheatbelt Bioregion	22,044.17	2,399.22 10.88%		12.65
						Total	7,869.68 ha	

Figure 6. Pre-European Vegetation of the Study Area.

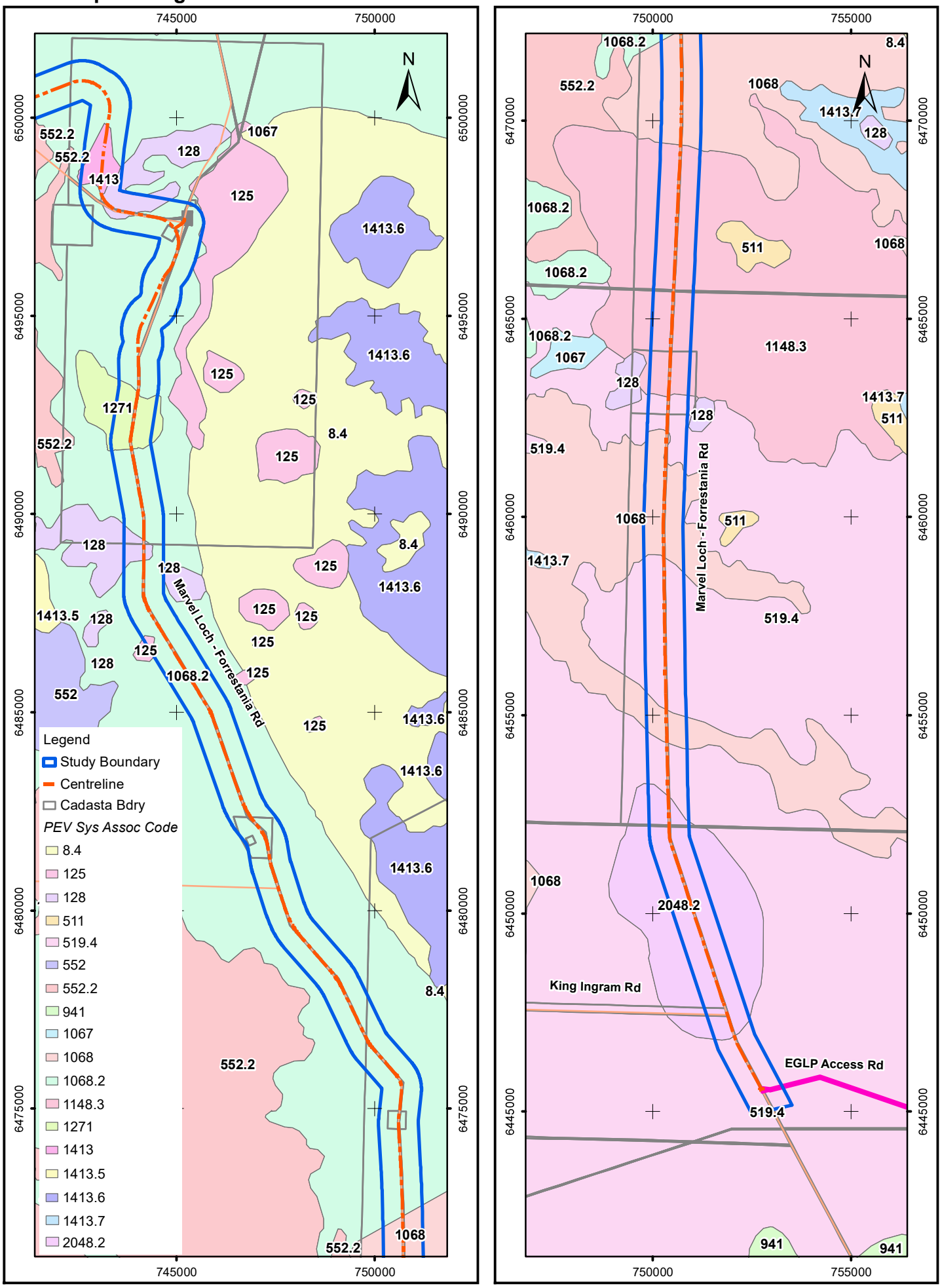
Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Pre European Vegetation - Sheet 1 of 2



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_04_01, Rev: A
Scale 1:125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, PEV: DPIRD

0 3km

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Pre European Vegetation - Sheet 2 of 2



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_04_02, Rev: A
Scale 1125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, PEV: DPIRD

0 3km

2.3.3. Groundwater Dependent Ecosystems (Terrestrial)

A Groundwater Dependent Ecosystem (GDE) is defined as an ecosystem that relies on groundwater for some or all its water requirements. The GDE Atlas is a national dataset of Australian GDEs to inform groundwater planning and management. The Atlas contains information about three types of ecosystems (aquatic, terrestrial and subterranean) (BoM, 2023b).

The vegetation of the Study Area that remains intact has been mapped as having a low to moderate potential for supporting a terrestrial GDE (BoM, 2023b). This includes woodland vegetation within the Great Western Woodlands (low to moderate) (as described in Section 2.3.7) and Wockallarry Nature Reserve (moderate). The only section of the Study Area mapped as having a high potential is the northern most end (1 km section) at the junction with Great Eastern Highway where vegetation remains intact surrounding the Moorine Rock townsite and the granite outcrop located on the northern side of Great Eastern Highway. Immediately adjacent (but outside of) the Study Area along the Marvel Loch – Forrestania Road, the chain of salt lakes present has resulted in the area being mapped as having a high potential for supporting a terrestrial GDE (BoM, 2023b).

Groundwater in the vicinity of the Early Grey deposit (located adjacent the southern end of the Study Area) is approximately 60 to 70m below surface (10m below surface in the area associated with the borefield) and is saline to hypersaline and therefore unlikely to support GDEs (Blueprint Environmental Strategies, 2017a).

2.3.4. Significant Wetlands

The are no wetlands of international (Ramsar) significance within 50 km of the Study Area (DBCA, 2023a). The nearest significant wetland, as listed under the Directory of Important Wetlands in Australia (DIWA) (DBCA, 2023b) is Lake Cronin, located approximately 32 km south of the Study Area. This small lake is the best example of a *Melaleuca*-dominated freshwater lake/marsh in the bioregion (DCCEEW, 2023a). Other significant wetlands in the greater region include: Lake Grace System located 157 km south west of the Study Area; Lake Barlee located 198 km north and Yealering Lakes System located 200 km west-south-west.

2.3.5. Environmentally Sensitive Areas

Environmentally sensitive areas (ESAs) are classes or areas of native vegetation where the exemptions for clearing vegetation under the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations) do not apply. They include the following:

- a declared World Heritage property as defined in sections 13 of the *Environment Protection and Biodiversity Conservation Act 1999* of the Commonwealth;
- an area that is included on the Register of the National Estate, because of its natural heritage value, under the *Australian Heritage Council Act 2003* of the Commonwealth;

- a defined wetland and the area within 50 m of the wetland;
- the area covered by vegetation within 50 m of rare flora, to the extent to which the vegetation is continuous with the vegetation in which the rare flora is located;
- the area covered by a threatened ecological community;
- a Bush Forever site listed in "Bush Forever" Volumes 1 and 2 (2000), published by the Western Australia Planning Commission, except to the extent to which the site is approved to be developed by the Western Australia Planning Commission, as described in subclause (3);
- the areas covered by the following policies —
    - (i) the Environmental Protection (Gnangara Mound Crown Land) Policy 1992;
    - (ii) the Environmental Protection (Western Swamp Tortoise) Policy 2002;
- the areas covered by the lakes to which the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 applies;
    - (i) protected wetlands as defined in the Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998;
    - (j) areas of fringing native vegetation in the policy area as defined in the Environmental Protection (Swan and Canning Rivers) Policy 1998.

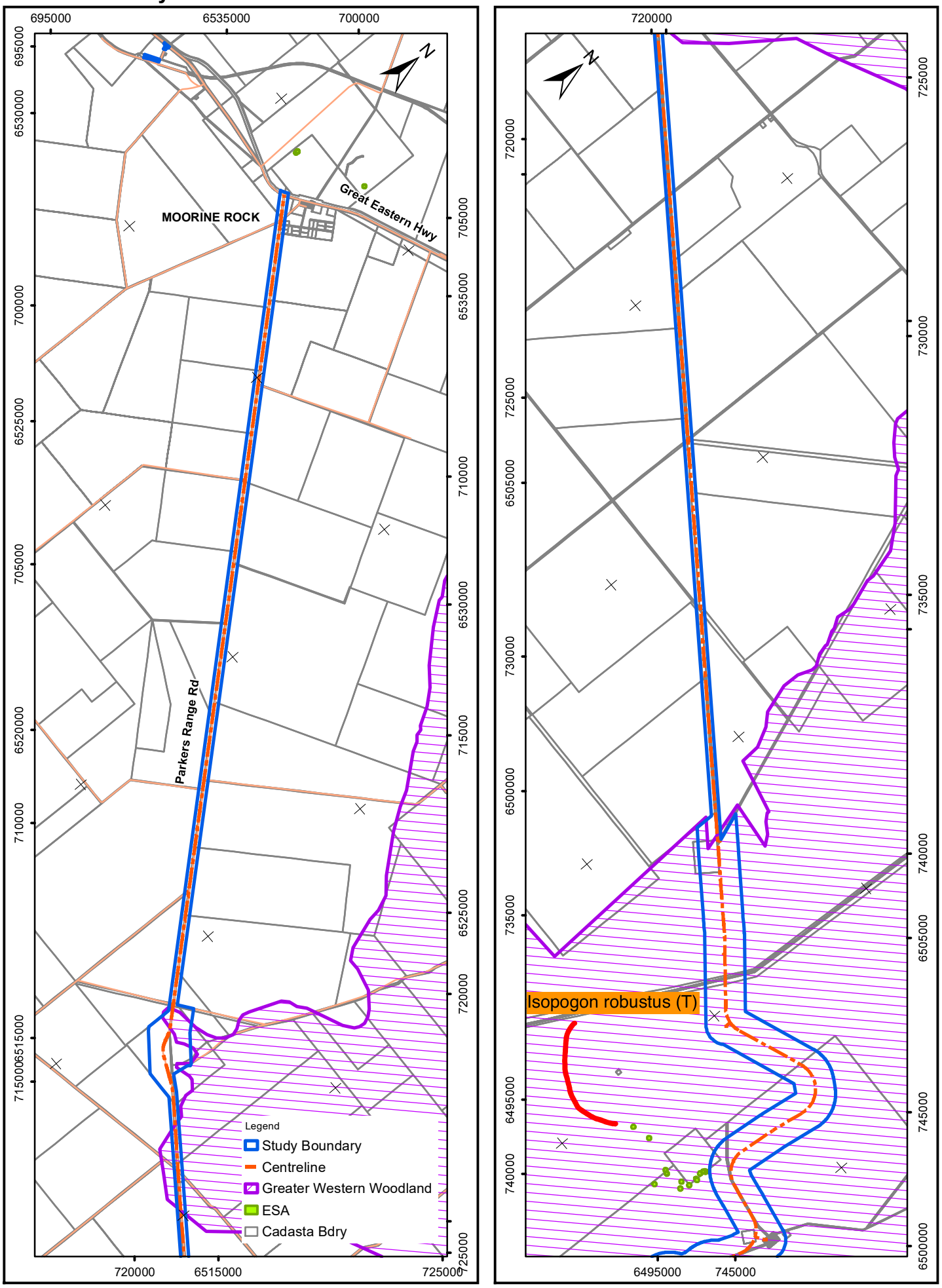
Three ESAs are present within the Study Area (Figure 7):

- The Study Area intersects the Jilbadgi Nature Reserve which is listed on the Register of the National Estate and therefore meets the criterion as an ESA.
- *Banksia dolichostyla* is listed as Threatened Flora by the DBCA. This species is present adjacent to the roadside from about the intersection of King Ingram Road southwards to the turnoff into the Mt Holland minesite. This region of roadside within 50m of *Banksia dolichostyla* plants therefore meets the criterion as an ESA.
- The Commonwealth listed 'Eucalypt Woodland of the Western Australian Wheatbelt' Threatened Ecological Community (TEC) under the *EPBC Act*, which is synonymous with the State listed Priority 3 PEC of the same name. The area covered by a TEC is classified as an ESA.

Beyond Jilbadgi Nature Reserve, nearby ESAs include (i) the Yellowdine Nature Reserve, located approximately 29 km north-west of the Study Area; and (ii) the Lake Cronin Nature Reserve, 32 km to the south (locations presented in Figure 8). Both are listed on the Register of the National Estate with the latter also containing a defined wetland (DWER, 2023b). Further, *Isopogon robustus* (T) is known from Mt Caudan in the Parker Range which lies to the south of the Study Area where the road diverts around the Mt Caudan minesite (Figure 7) and vegetation within 50m of this species also meets the criterion as an ESA.

Figure 7. Environmentally Sensitive Areas of the Immediate Region

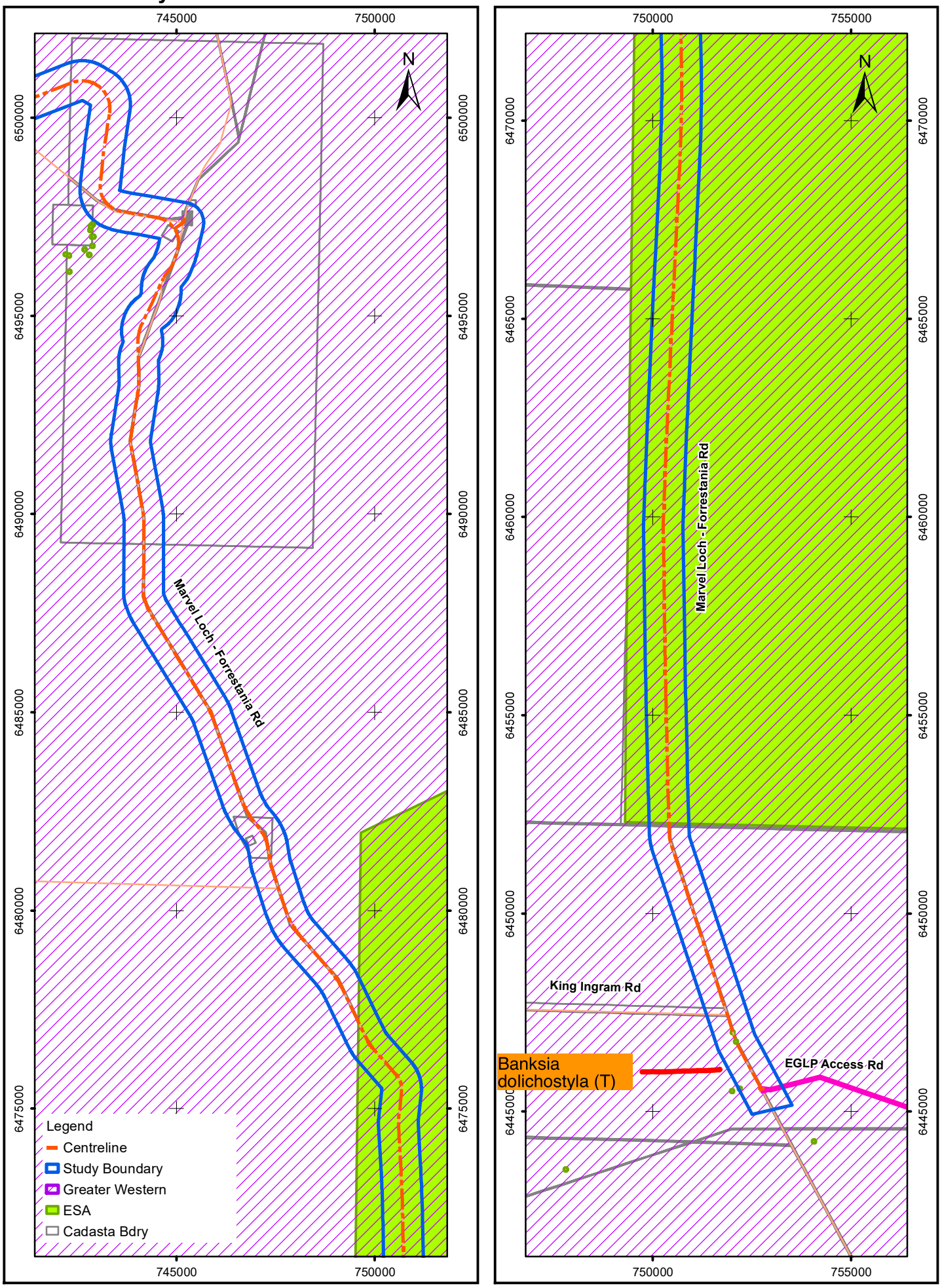
Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Environmentally Sensitive Areas - Sheet 1 of 2



Drawn: CAD Resources (08 9246 3242), Date: Apr 2023, CAD Ref: a2765_MR_MTH_31_08_01, Rev: A
Scale 1:125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, ESA: DBCA

0 3km

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Environmentally Sensitive Areas - Sheet 2 of 2



Drawn: CAD Resources (08 9246 3242), Date: Apr 2023, CAD Ref: a2765_MR_MTH_31_08_02, Rev: B
Scale 1125,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgatem ESA: DBCA

2.3.6. Conservation Reserves in the Region

There are 34 conservation reserves (DBCA- Legislated Lands) within approximately 50 km of the Study Area (Table 4) (DBCA, 2022a; DAWE, 2023a). The Study Area intersects two reserves; Jilbadji Nature Reserve and Wockallarry Nature Reserve with the Frog Rock Nature Reserve located approximately 2.5 km from the Study Area (Figure 8).

The Jilbadgi Nature Reserve is 207,213 ha in size and is substantially larger than the average reserve size (114 ha) in the Wheatbelt. It serves as an important fauna refugia site and contains a high diversity of fauna species and flora species endemism (DCCEEW, 2023b). As described in Section 2.5.5, this nature reserve is classified as an ESA. The Wockallarry Nature Reserve is an A Class reserve that is 209 ha in size and is dissected by the Parker Range Road.

Table 4. DBCA legislated land within the vicinity of the Study Area (DBCA, 2022a; DAWE, 2023a).

Name	Reserve No.	Reserve Class	~Distance from Study Area
Jilbadji Nature Reserve	24049		Intersects
Wockallarry Nature Reserve	29537	A	Intersects
Frog Rock Nature Reserve	20262	A	2.5 km SW
Un-named	40460		18 km W
Un-named	25801		23 km NE
Unnamed	43219	A	29 km N
Yellowdine Nature Reserve	41936		29 km NW
Unnamed	16000		29 km W
Unnamed	34197	A	30 km WSW
Unnamed	18584		31 km W
Lake Cronin Nature Reserve	36526	A	32 km S
Condarnin Rock Nature Reserve	29823		33 km NNW
Sandford Rocks Nature Reserve	1432	A	34 km ENE
Unnamed	30430	A	34 km NW
Unnamed	28562		35 km W
Unnamed	18583		37 km W
Biljahnie Rock Nature Reserve	29920		41 km NE
Unnamed	27146	A	41 km NW
Baladgie Lake Nature Reserve	42720		42 km NW
Carrabin Nature Reserve	16235	A	42 km W
Un-named	28323	A	43 km W
Unnamed	28940	A	43 km WSW
Un-named	28047	A	44 km SW

Name	Reserve No.	Reserve Class	~Distance from Study Area
Neendojer Rock Nature Reserve	34776		46 km W
Welsh Nature Reserve	30305		47 km W
Welsh Nature Reserve	30305		47 km W
Bushfire Rock Nature Reserve	29535		48 km SW
Bushfire Rock Nature Reserve	29535		48 km SW
Mount Hampton Nature Reserve	20526	A	48 km W
Duladgin Nature Reserve	2179		48 km NNW
Unnamed	36918	A	50 km NE
Marble Rocks Nature Reserve	20528		50 km SW
Lake Hurlston Nature Reserve	27837	A	52 km SW
Unnamed	9927		54 km SSW

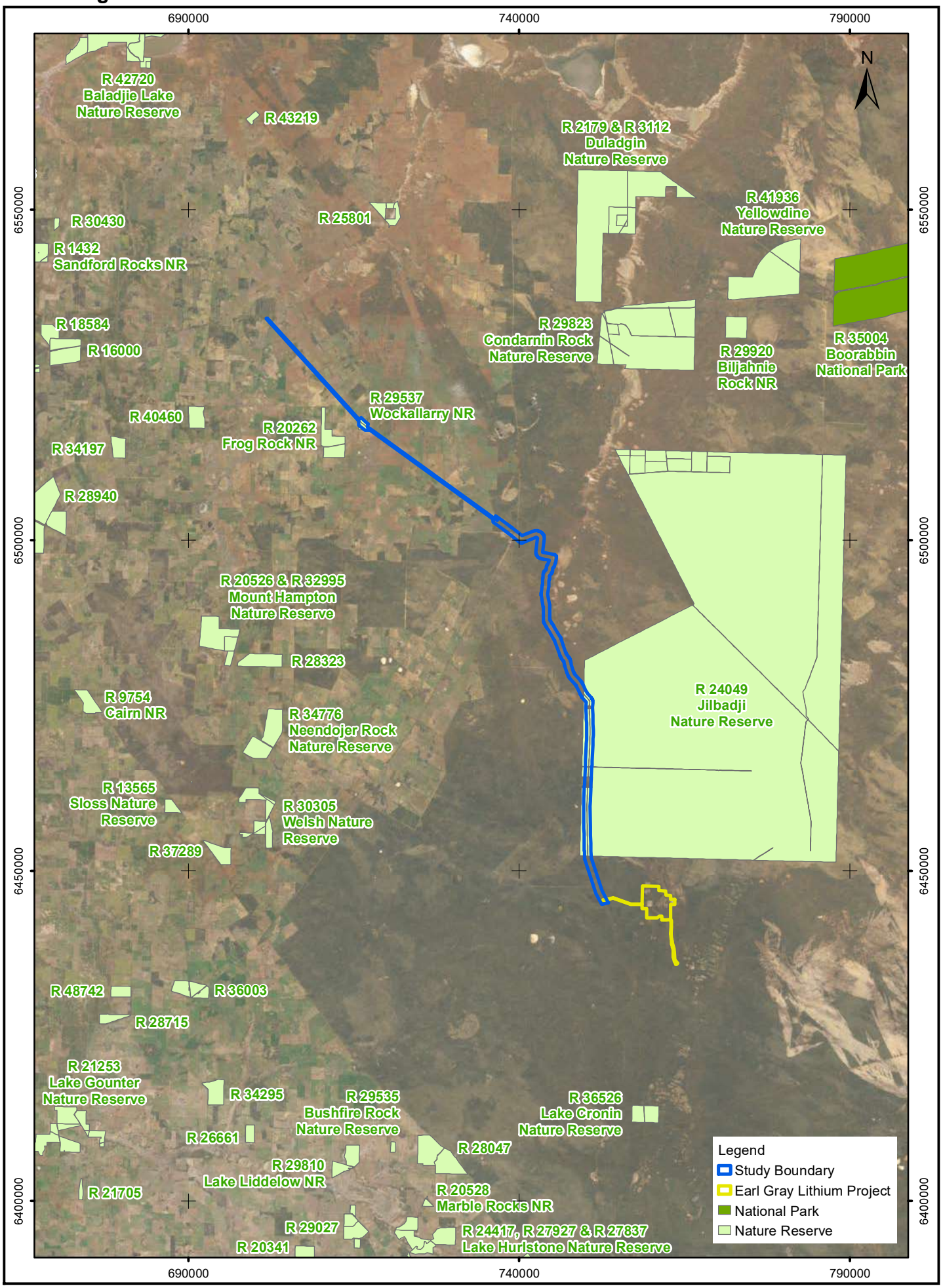
2.3.7. Great Western Woodlands

The Great Western Woodlands is an area of 16 million hectares of temperate woodland laying within the central and eastern Coolgardie biogeographic region, east of the extensively cleared agricultural region. It is the largest remaining area of intact Mediterranean climate woodland on Earth and is recognised as having high degrees of endemism and conservation value. Approximately 20% of Australia's known flora occurs within this area. There is almost no permanent water within the region, with surface water draining into, and evaporating from, numerous salt lakes. The Great Western Woodlands is located predominantly on unallocated Crown land, with significant areas of pastoral lease and conservation reserve also present (DEC, 2010).

The Study Area is located within the western boundary of the Great Western Woodlands until it enters the extensively cleared agricultural zone along Parker Range Road (Figure 7).

Figure 8. Regional DBCA Legislated Land

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
DBCA Legislated Land



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_06, Rev: A
Scale 1:250,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, Legislated Land: DBCA

0 15 km

3. Methods

3.1. Desktop Assessment

3.1.1. Literature Review

A review of available literature relevant to the Study Area was undertaken, utilising (but not limited to) the Index of Biodiversity Surveys for Assessment search portal. A total of 19 reports were reviewed, pertaining to the Earl Grey (Mt Holland) Lithium Project area and the Parker Range Iron Ore Project.

Extensive botanical survey has been conducted across the adjacent Earl Grey/Mt Holland Lithium Project area between 2017 – 2021 and 16 reports were reviewed from this project. Previous surveys conducted along the mine access road overlap the current Study Area at the intersection of the Marvel Loch – Forrestania Road.

The Parker Range Iron Ore Project is located approximately 50 km north-west of the Earl Grey Lithium Project. The Marvel Loch – Forrestania Road borders the northern edge of the project, having been redirected to allow for the construction of the minesite. The Study Area lies immediately adjacent the project and within the area surveyed to encompass the current bypass route. Two reports were reviewed from the Parker Range Iron Ore Project, including the Public Environmental Review document (from 2010) which summarised botanical surveys conducted from 2007 – 2010, and the recent (2021) Parker Range Haul Road Project report.

3.1.2. Database Searches

Database searches were conducted to identify potential Threatened and Priority Flora species, Threatened Ecological Communities (TECs), Priority Ecological Communities (PECs), or other areas of conservation significance that may be encountered during field surveys (Table 5). The DBCA Framework for Conservation Significant Flora; and the Definitions of TECs and PECs are presented in Appendix 1and Appendix 2.

Subsequent to the database searches, a desktop assessment of the likelihood of each Threatened and Priority flora species, TEC or PEC occurring within the Study Area was performed by considering (a) the proximity of known Conservation Significant flora and communities to the Study Area; and (b) the similarities between supporting habitats for each species and those of the Study Area.

A search of DPIRD's Western Australian Organism List (WAOL) for the Shire of Yilgarn was completed to identify plant species declared under the *Biosecurity and Agriculture Management Act 2007* (BAM Act) that are known to occur in WA, for the local government area.

Table 5. Details of database searches conducted.

Provider	Reference	Database	Search parameters
Department of Biodiversity, Conservation and Attractions (DBCA)	DBCA, (2022b)	Threatened and Priority Flora database	50 km radius of Study Area polygon.
	DBCA (2022c)	Western Australian Herbarium Specimen database	
	DBCA (2022d)	Threatened and Priority Ecological Communities database	50 km radius of Study Area polygon.
Department of Agriculture, Water and the Environment (DAWE)	DAWE (2023a)	Protected Matters Search Tool (PMST)	50 km radius of Study Area, based on polygon the length of Study Area and 1km wide.
Department of Primary Industries and Regional Development (DPIRD)	DPIRD (2023c)	Western Australian Organism List	Shire of Yilgarn

4. Results

4.1. Literature Review

A summary of the key findings, in relation to flora and vegetation, of the 19 reports identified from the literature review are presented in Table 6. Extensive botanical survey work has been conducted across the Earl Grey Mt Holland project area (including the water pipeline route) from 2016 to 2020. Areas previously surveyed intersect the Study Area at two locations; along the Marvel-Loch Forrestania Road (near mine access intersection) and along Parker Range Road from north-west of Wockallarry Nature Reserve to Great Eastern Highway. A total of 47 Threatened and Priority flora have been located during surveys associated with the Earl Grey Mt Holland project area. This included 29 conservation significant taxa within the project's development envelope and a further 18 taxa outside of the envelope that were located in the course of regional targeted flora surveys (Mattiske Consulting, 2021a). The flora of this region is incredibly diverse and subject to continual taxonomic and conservation status review.

Although mapped (within the DBCA TEC/PEC database) as occurring within the 'Ironcap Hills vegetation assemblages' PEC (Priority 3) buffer, the vegetation of the Earl Grey Mt Holland project displayed poor correlation with the PEC and was deemed non-representative (Mattiske Consulting, 2018). A small section of the Study Area intersects this mapped PEC along the Marvel Loch – Forrestania Road (Figure 9) and will therefore require assessment to determine if the vegetation is representative of the PEC. The Earl Grey Mt Holland water pipeline route botanical survey encountered vegetation that was assessed for compatibility with the 'Eucalypt Woodland of the Western Australian Wheatbelt' PEC (Priority 3)/TEC as the latter is mapped as having a scattered occurrence, particularly around the Parker Range Road/Moorine Rock area. Although some areas received a tentative assessment as the PEC/TEC, the majority of the relevant *Eucalyptus* trees occurred outside the road verge on private agricultural land and were therefore inaccessible (for further assessment) but also outside of any possible (direct) impact zone (Mattiske Consulting, 2020b, 2020c).

Biological assessments have been conducted for the Parker Range (Mt Caudan) Iron Ore Project, with the most recent (publicly available) flora and vegetation survey conducted in 2019 – 2020 for a haul road (to the Koolyanobbing Iron Ore mine site). The area surveyed for the proposed Parker Range project haul road intersects the Study Area along Parker Range Road. Twenty five Priority flora species were located within this ~80 km long survey corridor. Earlier survey work conducted from 2007 – 2010 for the Parker Range Iron Ore Project site identified seven Priority Flora species and one Threatened Flora species (*Isopogon robustus*). The Parker Range Iron Ore Project site lies wholly within the 'Plant Assemblages of the Parker Range System 'PEC' (P3).

It should be noted that the Threatened species *Banksia sphaerocarpa* var. *dolichostyla* (as referred to in Table 6) underwent taxonomic review in 2022 and is now known as *Banksia dolichostyla.* The conservation status of this species remains unchanged.

Table 6. Summary of available reports relevant to the Study Area.

Study details	Survey type	Summary of results	Significant findings	~Distance from Study Area
Mt Holland/Earl Grey Lithium Project				
Threatened and Priority Flora Assessment Earl Grey Lithium Project Pre-Clearance Surveys. Report prepared for Covalent Lithium Pty Ltd by Mattiske Consulting Pty Ltd, April 2021a.	Targeted survey for all potential conservation significant flora taxa present within the infrastructure footprint of the mine development envelope. 18 surveys conducted from 2019 – 2020.	29 conservation significant taxa recorded within the project's development envelope. A further 18 conservation significant taxa were recorded outside of the development envelope in the course of regional targeted flora surveys (conducted by various consultancies).	The results of the direct and indirect (total) impacts assessment determined that the total regional population impacts to all conservation significant taxa recorded within the project's development envelope were below the respective thresholds.	Survey area overlaps the Study Area along Marvel-Loch Forrestania Road (near mine access intersection) and along Parker Range Road from north-west of Wockallarry Nature Reserve to Great Eastern Highway
Earl Grey Lithium Project Field Survey 14th – 21st March, 2021. Memorandum; vegetation health monitoring transects. Report prepared by Mattiske Consulting Pty Ltd, March 2021b.	Re-monitoring of vegetation health monitoring transects established in 2019 and 2020. Focusing on *Hibbertia glabriuscula* (P3), *Thryptomene salina* (P1), and *Thryptomene* sp. Hyden (B.J. Lepschi & L.A. Craven 4477) (P1)		*Hibbertia glabriuscula* (P3) was not recorded at any new locations during this survey, but is likely restricted to open S2 vegetation. The *Thryptomene salina* (P1) population recorded in November 2020 appeared very restricted and was not present in large numbers. *Thryptomene* sp. Hyden (B.J. Lepschi & L.A. Craven 4477) (P1) was observed growing in large numbers in open areas of S2 vegetation on pale brown – yellow sand.	Survey area overlaps the Study Area along Marvel-Loch Forrestania Road, just north of mine access road intersection.

Study details	Survey type	Summary of results	Significant findings	~Distance from Study Area
Targeted Flora Survey – Mt Holland Lithium Project Report prepared for Covalent Lithium Pty Ltd by 360 Environmental, November 2020.	Targeted flora survey of eight conservation significant flora taxa outside of the project disturbance envelope to quantify regional populations.		Four of the targeted species were located with a total of 63,736 individuals recorded outside the project disturbance envelope: • *Acacia undosa* (P3); 59,302 individuals • *Microcorys* sp. Mt Holland (P1); 3,968 • *Microcorys* sp. Mt Holland – broad leaf; 394 • *Chamelaucium* sp. Parker Range (P1); 52 • *Eutaxia lasiocalyx* (P2): 20	1 km west of Study Area between minesite and Marvel Loch – Forrestania Road.
Earl Grey Lithium Project Introduced Flora (Weed) Survey Report prepared for Covalent Lithium Pty Ltd by Mattiske Consulting Pty Ltd, October 2020a.	Targeted survey for weed species within areas of disturbance	16 weed species representing 7 families and 14 genera	No WoNS or Declared Weeds present	Survey area overlaps the Study Area along Marvel-Loch Forrestania Road (near mine access intersection).
Earl Grey Lithium Project Field Survey 25th October 2020. (Water Pipeline TEC Assessment) Memorandum prepared for Covalent Lithium Pty Ltd by Mattiske Consulting Pty Ltd, October 2020b.	Field assessment for the Wheatbelt Woodland TEC along the water pipeline corridor. Five areas assessed.		Comment made that trees along the section of Parker Range Road that was assessed occurred in farmland and not road verge.	Overlaps the Study Area along the Parker Range Road (NW of Wockallarry Nature Reserve)

Study details	Survey type	Summary of results	Significant findings	~Distance from Study Area
Flora and Vegetation Assessment Earl Grey Lithium Project Water Pipeline Alignment Supplementary Report Report prepared for Covalent Lithium Pty Ltd by Mattiske Consulting Pty Ltd, September 2020c.	Reconnaissance of two locations (<1.5 ha in total)	No Threatened or Priority flora present. Vegetation in poor to degraded condition.		Immediately adjacent northern end of Study Area near Great Eastern Highway.
Flora and Vegetation Assessment Earl Grey Lithium Project Water Pipeline Corridor Report prepared for Covalent Lithium Pty Ltd by Mattiske Consulting Pty Ltd, May 2020d.	Reconnaissance	270 flora taxa from 40 families and 117 genera. Three introduced species.	*Verticordia mitodes* (P3) recorded. 'Eucalypt Woodlands of the Western Australian Wheatbelt' PEC/TEC present.	Survey area overlaps the Study Area along Marvel-Loch Forrestania Road (near mine access intersection) and along Parker Range Road from north-west of Wockallarry Nature Reserve to Great Eastern Highway
Flora Survey Mt Holland Report prepared Covalent Lithium Pty Ltd by GHD, March 2020.	Targeted of two potential airstrip locations		Six conservation significant flora taxa located: *Banksia sphaerocarpa* var. *dolichostyla* (T), *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1), *Eutaxia lasiocalyx* (P2), *Hakea pendens* (P3), *Verticordia stenopetala* (P3) and *Verticordia gracilis* (P3).	1 km from southern end of Study Area.

Study details	Survey type	Summary of results	Significant findings	~Distance from Study Area
Earl Grey Lithium Project Threatened and Priority Flora Assessment Pre-Clearance Surveys. Report prepared for Covalent Lithium Pty Ltd by Mattiske Consulting Pty Ltd, December 2019a.	Targeted survey of development envelope for all potential conservation significant taxa		29 flora taxa of conservation significance recorded within development envelope including two Threatened taxa *Eremophila verticillata* and *Banksia sphaerocarpa* var. *dolichostyla*, 26 Priority flora and one undescribed species (*Hibbertia* sp. nov.). The latter is now the Priority 1 species *Hibbertia* sp. Mt Holland (B. Ellery BE 1437) (Mattiske Consulting, 2021a).	Survey area overlaps the Study Area along Marvel-Loch Forrestania Road (near mine access intersection).
Earl Grey Lithium Mine Regional Flora Survey Report prepared for Covalent Lithium Pty Ltd by Strategen – JBS & G, July 2019.	Targeted survey of multiple locations within the Eastern Wheatbelt for *Banksia sphaerocarpa* var. *dolichostyla* (T) and *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1)		*Banksia sphaerocarpa* var. *dolichostyla* (T); located 490 individuals across four sites. *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1); no individuals located.	Nearest surveyed site is 8 km west of Study Area along Marvel Loch – Forrestania Road.
Threatened and Priority Flora Assessment Tenement M77/215 Proposed Tracks and Drill Hole Locations. Report prepared for Kidman Resources Ltd, by Mattiske Consulting Pty. Ltd., April 2019b.	Targeted survey		No Threatened or Priority flora, TECs or PECs located.	13 km south-west of southern end of Study Area

Study details	Survey type	Summary of results	Significant findings	~Distance from Study Area
Earl Grey Lithium Project Targeted Survey: *Banksia sphaerocarpa* var. *dolichostyla* (T) Report prepared for Covalent Lithium Pty Ltd by Mattiske Consulting Pty Ltd, January 2019c.	Targeted survey of Earl Grey Lithium Project area and broader region for *Banksia sphaerocarpa* var. *dolichostyla* (T)	18 populations located with 16,503 plants recorded.	Total estimated population of 22,586 plants.	Two locations within Study Area (southern end along Marvel Loch – Forrestania Road).
Earl Grey Lithium Project Conservation Significant Flora Targeted Survey Report prepared for Covalent Lithium Pty Ltd by Mattiske Consulting Pty Ltd, January 2019d.	Targeted survey for 21 species of significance within areas of potential clearing (in excess of 10% of their mapped extent)	Seven significant flora taxa located within the proposed infrastructure footprint.	The majority of the targeted taxa will not experience large impacts as a result of vegetation clearing. The taxa which have the greatest potential to be impacted by mine development include (in decreasing order of potential impacts): *Eutaxia lasiocalyx* (P2), *Microcorys* sp. Mt Holland (D. Angus DA2397) (P1), *Acacia undosa* (P3), *Labichea rossii* (P1), *Hakea pendens* (P3) and *Acacia* sp. Mt Holland (B. Ellery BE1147), now *Acacia lachnocarpa* (P1).	Nearest location is immediately adjacent southern end of Study Area near the intersection of the mine access road and Marvel Loch – Forrestania Road.

Study details	Survey type	Summary of results	Significant findings	~Distance from Study Area
Statistical Comparison of Vegetation within the Earl Grey Lithium Project with the Ironcap Hills Vegetation Complex. Memorandum prepared for Kidman Resources Ltd, by Mattiske Consulting Pty Ltd, October 2018a.	Statistical comparison of flora survey data from 'Ironcap Hills vegetation assemblages (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill) (banded ironstone formation)' PEC (P3) (Gibson, 2004) with that of the Earl Grey Lithium Project, as recorded by Mattiske Consulting Pty Ltd.		Based on statistical comparison of the available data, there was poor correlation between the vegetation of the "Ironcap Hills vegetation assemblages" PEC and vegetation recorded within the Earl Grey Lithium Project.	Survey data included area of overlap with Study Area (near intersection of mine access road and Marvel loch – Forrestania Road).
Flora and Vegetation Assessment Early Grey Lithium Project Report prepared for Kidman Resources Ltd, by Mattiske Consulting Pty Ltd, March 2018b.	Detailed	369 flora taxa from 49 families and 140 genera. One introduced species. 26 vegetation communities.	*Banksia sphaerocarpa* var. *dolichostyla* (T), 11 Priority flora and several undescribed species located. Survey area fell within the buffer of the 'Ironcap Hills vegetation assemblages' (P3) PEC, but none of the landforms or corresponding species communities associated with the PEC were recorded.	Survey area included the mine access road to Marvel-Loch Forrestania Road which overlaps the southern end of the Study Area.

Study details	Survey type	Summary of results	Significant findings	~Distance from Study Area
Targeted Surveys for Threatened Flora Species *Banksia sphaerocarpa* var. *dolichostyla.* Summary Report Earl Grey Lithium Project. Report prepared for Kidman Resources Ltd by Blueprint Environmental Strategies, May 2017b.	Summary of previous targeted surveys between 2014 – 2017 within development envelope.	Surveys recorded 521 specimens of *Banksia sphaerocarpa* var. *dolichostyla* from a number of locations including adjacent to the existing landfill, various roads, the accommodation camp and a borrow pit.	No specimens of *Banksia sphaerocarpa* var. *dolichostyla* located in the proposed Project disturbance footprint.	Survey area overlaps the Study Area along Marvel-Loch Forrestania Road (near mine access intersection).
Flora and Vegetation of the Earl Grey, Irish Breakfast and Prince of Wales Prospects Mt Holland Project Report prepared for Kidman Resources Ltd, by Mattiske Consulting Pty Ltd, April 2017.	Detailed	184 flora taxa from 35 families and 86 genera	*Eutaxia lasiocalyx* (P2), *Acacia undosa* (P3), *Hakea pendens* (P3), and *Calamphoreus inflatus* (P4) recorded within the prospects. *Banksia sphaerocarpa* var. *dolichostyla* (T) located just outside of survey area at Earl Grey.	5 km east
Parker Range (Mt Caudan) Iron Ore Project				

Study details	Survey type	Summary of results	Significant findings	~Distance from Study Area
Baseline flora, vegetation and fauna surveys for the Parker Range Haul Road Project Report prepared for mineral Resources Ltd by Phoenix Environmental Sciences, May 2021.	Detailed surveys conducted Nov 2019 and July 2020. Targeted surveys between Sept – Oct 2020. Haul road extends from the Parker Range Iron Ore mine to the Koolyanobbing Operations.	423 flora taxa from 52 families and 161 genera. Nine introduced species present (no WoNS or Declared Weeds) 23 vegetation types identified.	25 Priority flora species located. One new undescribed species recorded: *Microcorys* sp. nov. (GBW 22/11/2019) (unable to verify if this species has since been identified). A significant (200 km) range extension recorded for *Rhagodia ulicina.* No Threatened flora located. 'Plant Assemblages of the Parker Range System' PEC (P3) present. The first recorded instance of **Centaurea benedicta* within WA is of potential significance to the State. Location within area surveyed (and proximity to Study Area) not provided in report, no specimen vouchered at WA Herbarium, identity cannot be verified.	Small area overlaps the Study Area at the intersection of Parker Range Road and the proposed haul road for the Parker Range Iron Ore mine.
Summary of survey work undertaken by Botanica Consulting from 2007 to 2010 for the Parker Range Iron Ore Project, as presented in the Parker Range (Mt Caudan) Iron Ore Project Public Environmental Review. Report prepared by Keith Lindbeck and Associates for Cazaly Resources Limited, November 2010.	Level 1 and Level 2 surveys conducted over four areas between 2007 and 2010. Included the Marvel Loch – Forrestania bypass route to the north of the (then proposed) minesite.	268 flora taxa from 48 families and 120 genera. Four introduced species. 43 vegetation types identified across the various survey areas.	Seven Priority flora species located. In addition to the *Isopogon robustus* (T) population (470 plants) previously found near the Parker Range Project area, a further 790 plants were located in the southern parts of the project area. 'Plant Assemblages of the Parker Range System' PEC (P3) present.	Study Area overlaps the survey area along the bypass route to the north of the mine.

4.1. Database Searches

4.1.1. Significant Flora

A total of 104 flora taxa of conservation significance were identified by the DBCA database searches as having been recorded within approximately 50 km of the Study Area (Table 7). This included seven Threatened; 33 Priority 1; 12 Priority 2; 39 Priority 3 and 12 Priority 4 taxa. In addition, the species *Thomasia gardneri*, has been recorded within the search radius near Mt Holland. Commonly referred to as Mt Holland *Thomasia*, this small shrub species has been sampled only once (in 1929) near Mt Holland and is now Presumed Extinct (X) (DCCEEW, 2023c). The P1 taxon *Thryptomene salina* was recorded in November 2020 during a vegetation mapping survey of the Earl Grey Lithium Project by Mattiske Consulting and was re-visited and confirmed in March 2021 (outside its flowering period). This species did not appear in the DBCA database searches however is included in Table 7. The PMST database search returned an additional 21 Threatened flora species that were not identified within the DBCA database searches (Table 7).

In total, 126 flora taxa of conservation significance were identified as a result of database searches and the literature review. A summary of these taxa in regard to description/habitat, nearest known location to the Study Area and an assessment of likelihood of occurrence within the Study Area is presented in Table 7. The latter is based on known distribution and habitat preferences, as sourced from information available from the WA Herbarium (unless otherwise referenced).

A total of 20 species of conservation significance (one Threatened, five Priority 1, four Priority 2, nine Priority 3 and one Priority 4) have been previously recorded within the Study Area (Figure 9). Nine species of conservation significance have been located within 1 km of the Study Area and an additional ten species within 5 km. Of the 106 species not previously recorded within the boundary of the Study Area, 66 species were assessed as having the potential to occur (three Threatened, 24 Priority 1, eight Priority 2, 20 Priority 3 and 11 Priority 4) while 40 species were considered unlikely to occur (Table 7).

Table 7. Summary of conservation significant flora database search results for the vicinity of the Study Area (sorted by conservation rank) and their likelihood of occurrence within the Study Area (DBCA, 2022b, 2022c; DAWE, 2023a).

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Thomasia gardneri	X	EX	EX	x		Erect, multi-stemmed shrub, to 0.5 m high. Fl. pink-purple, Sept. Yilgarn. Recorded 8.5 km south-east of southern end of Study Area.	Unlikely
Acacia lanuginophylla	T	VU	EN	x	x	Dense shrub, 0.5-1.2 m high. Fl. yellow, Jul to Oct. White/grey sand, clayey sand, gravelly soils. Flats, along drainage lines. Lake Grace, Yilgarn. Recorded 8.5 km south-east of southern end of Study Area.	Possible
Banksia mimica	T	VU	EN		x	Prostrate, lignotuberous shrub, 0.15-0.4 m high. Fl. yellow-brown, Dec or Jan to Feb. White or grey sand over laterite, sandy loam. Augusta Margaret River, Busselton, Gingin, Gosnells, Kalamunda, Nannup, Victoria Plains. Inclusion in database search results appear to be an anomaly.	Unlikely
Banksia dolichostyla (formerly *Banksia sphaerocarpa* var. *dolichostyla*)	T	VU	VU	x	x	Lignotuberous shrub, 1-3 m high. Fl. yellow-orange, Mar to May. Lateritic gravel, grey sand. Esperance, Kondinin, Narembeen, Yilgarn. Recorded within Study Area.	Recorded
Boronia adamsiana	T	VU	VU		x	Erect shrub, 0.3-1 m high. Fl. pink-white, Jul to Oct. Yellow sand/loam over laterite. Flats, road verges. Dalwallinu, Kellerberrin, Merredin, Mount Marshall, Mukinbudin, Nungarin, Trayning, Westonia. Recorded 40 km west of northern end of Study Area (near Westonia).	Unlikely
Boronia revoluta	T	VU	EN		x	Shrub, 0.4-0.8 m high. Fl. pink, Jul to Aug. Stony sandy loam or sand. Plains, hillsides and summits. Kondinin, Kulin, Lake Grace. Record 60 km south of southern end of Study Area.	Unlikely

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Caladenia hoffmanii	T	EN	EN		x	Tuberous, perennial, herb, 0.13-0.3 m high. Fl. green & yellow & red, Aug to Oct. Clay, loam, laterite, granite. Rocky outcrops and hillsides, ridges, swamps and gullies. Chapman Valley, Greater Geraldton, Northampton. Inclusion in database search results appear to be an anomaly.	Unlikely
Caladenia graniticola	T	EN	EN		x	Tuberous, perennial, herb, to 0.21 m high, plant usually single flowered. Fl. green-yellow, Oct. Gritty sandy clay, granite. Near low exposed rock outcrops. Albany, Kulin, Lake Grace. Recorded 95 km south west of southern end of Study Area.	Unlikely
Calectasia pignattiana	T	VU	VU		x	Rhizomatous, prickly herb, to 0.5 m high. Fl. blue-purple, Aug to Oct. Sand to sandy clay over granite or laterite, gravel. Plains and gentle slopes. Dowerin, Dumbleyung, Kent, Kondinin, Kulin, Lake Grace, Narrogin, Quairading, Wagin, West Arthur, Wickepin. Recorded 38 km south east of southern end of Study Area.	Unlikely
Dasymalla axillaris	T	EN	CE		x	Dalwallinu, Perenjori, Wongan-Ballidu, Yalgoo. Inclusion in database search results appear to be an anomaly.	Unlikely
Daviesia microcarpa	T	EN	EN		x	Sprawling, tangled shrub, to 0.4 m high, ca 1 m wide. Fl. orange & red, Sep. Weathered gravel. Eastern Goldfield, Southern Cross. Recorded 21 km east-north-east of northern end of Study Area (near Southern Cross).	Unlikely

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Eremophila resinosa	T	EN	EN		x	Shrub, 1.2-4 m high. Fl. green-white-yellow, Sep to Nov. Granitic soils, sandy loam. Stony gullies, sandplains. Dalwallinu, Greater Geraldton, Kellerberrin, Koorda, Mukinbudin, Nungarin, Perenjori, Trayning, Westonia, Wongan-Ballidu, Yilgarn. Recorded 40 km east of northern end of Study Area (near Westonia).	Unlikely
Eremophila verticillata	T	CE	EN	x	x	Low spreading shrub, up to 0.8 m high, to 1 m wide. Fl. purple-violet, Nov to Dec. Clay loam, loam over limestone. Kulin, Lake Grace, Yilgarn. Recorded 8 km south-east of southern end of Study Area.	Possible
Eremophila virens	T	EN	EN		x	Erect, slender shrub, 1.5-5 m high. Fl. green, Aug to Oct. Red/brown sand. Granite hillsides. Coolgardie, Mukinbudin, Nungarin, Westonia. Recorded 60 km north-west of northern end of Study Area.	Unlikely
Eremophila viscida	T	EN	EN		x	Shrub, 1.2-4 m high. Fl. green-white-yellow, Sep to Nov. Granitic soils, sandy loam. Stony gullies, sandplains. Dalwallinu, Greater Geraldton, Kellerberrin, Koorda, Mukinbudin, Nungarin, Perenjori, Trayning, Westonia, Wongan-Ballidu, Yilgarn. Recorded 40 km west of northern end of Study Area (near Westonia).	Unlikely
Eucalyptus brevipes	T	EN	EN		x	(Mallee), 3-5(-6) m high, bark rough. Fl. white-cream, Oct. White or yellow sand, sandy loam. Granite outcrops. Mount Marshall, Mukinbudin, Nungarin, Westonia. Recorded 57 km north-west of northern end of Study Area.	Unlikely

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Eucalyptus crucis subsp. *crucis*	T	EN	VU	x	x	(Mallee), 2-8 m high, bark rough, 'minni-ritchi'. Fl. white, Oct or Dec or Jan to Mar. Sand, loam. Granite outcrops. Menzies, Merredin, Mount Marshall, Westonia, Yilgarn. Recorded 1 km north of northern end of Study Area (near Moorine Rock granite outcrop).	Unlikely
Eucalyptus steedmanii	T	VU	VU	x	x	Tree, 2-8(-12) m high, bark smooth. Fl. white, Jan to Mar. Gravelly loam over ironstone, sand. Low hills, undulating plains. Kondinin, Ravensthorpe. Recorded 23 km south-west of southern end of Study Area.	Unlikely
Frankenia parvula	T	EN	EN		x	Procumbent to ascending small shrub. Bruce Rock, Cunderdin, Kellerberrin, Yilgarn. Recorded 53 km north-east of the northern end of the Study Area.	Unlikely
Gastrolobium diabolophyllum	T	CE	CE		x	Erect, open, robust shrub, to 1.5 m high. Fl. Orange, yellow, pink, red, Sep. Yellow-brown sand over laterite. Broadly undulating dunes. Merredin, Yilgarn. Recorded 30 km west-north-west of northern end of Study Area.	Unlikely
Gastrolobium graniticum	T	VU	EN		x	Erect, open shrub, to 2.5 m high. Fl. Yellow, orange, red, Aug to Sep. Sand, sandy loam, granite. Margins of rock outcrops, along drainage lines. Coolgardie, Narembeen, Yilgarn. Known as Bodallin Poison. Recorded 52 km north-east of mid section of Study Area.	Unlikely
Isopogon robustus	T	CE	CE	x	x	Shrub, to 1.5 m high. Fl. pink, Oct. Skeletal grey sandy loam, laterite. Ridges. Yilgarn. Recorded 100 m from Study Area (in Parker Range minesite)	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Melaleuca sciotostyla	T	EN	EN		x	Spreading shrub, 0.6-1.5 m high. Fl. Aug. Orange clayey sand with lateritic pebbles. Scree slopes. Bruce Rock, Cunderdin, Dowerin, Kellerberrin, Mount Marshall, Quairading, Tammin, Victoria Plains, Westonia, Wongan-Ballidu, Yilgarn. Recorded 61 km north-west of northern end of Study Area.	Unlikely
Paragoodia crenulata	T	VU	CE		x	Small herbaceous plant with perennial underground parts, and stems to 8 cm long. The leaves are trifoliate and the leaflets have crenulated margins. Fl. Brown and yellow, Jul to Aug. (DSEWPC, 2013). Formerly known as *Muelleranthus crenulatus.* Kondinin. Recorded 28 km south of southern end of Study Area.	Unlikely
Philotheca falcata	T	EN	CE	x	x	Small, much-branched shrub, 0.15-0.25 m high. Fl. white, Oct. Yilgarn. Recorded 49 km east of northern end of Study Area.	Unlikely
Ricinocarpos brevis	T	EN	EN		x	Shrub, to 1.8 m high. Fl. white, Jun to Jul. Rocky hillslopes, rock outcrops. Menzies, Yilgarn. Recorded 145 km north of northern end of Study Area (listed as occurring in Yilgarn, but no specimens appear on database).	Unlikely
Roycea pycnophylloides	T	VU	EN		x	Perennial, herb, forming densely branched, silvery mats to 1 m wide. Fl. Sep. Sandy soils, clay. Saline flats. Bruce Rock, Cunderdin, Dalwallinu, Kellerberrin, Kent, Kondinin, Kulin, Lake Grace, Quairading, Westonia. Recorded 55 km west-north-west of northern end of Study Area.	Unlikely
Tecticornia flabelliformis	T	VU	VU		x	Erect shrub, to 0.2 m high. Clay. Saline flats. Coolgardie, Kalgoorlie-Boulder, Westonia. Recorded 46 km north of northern end of Study Area.	Unlikely

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Verticordia staminosa var. *cylindracea*	T	VU	EN		x	Erect, compact shrub, 0.15-1 m high. Fl. green-yellow/yellow-brown, Jul to Oct. Soil pockets. Granite outcrops. Lake Grace. Recorded 117 km south-west of the southern end of the Study Area.	Unlikely
Acacia lachnocarpa (formerly *Acacia* sp. Mt Holland (B. Ellery BE 1147))	P1			x		Tall dense shrub growing 1 m tall and 0.8 m wide. Branchlets and pods densely woolly. Recorded on clay with large white quartz rocks. (GHD, 2020). Yilgarn Recorded 4 km east of southern end of Study Area.	Possible
Acacia sp. Forrestania (D. Angus DA 3001)	P1			x		Low spinescent shrub growing to 0.2 m high and 0.2 m wide. Recorded on lateritic orange-red clay soils on flats and lower slopes (GHD, 2020). Yilgarn Recorded 8.5 km south-east of southern end of Study Area.	Possible
Beyeria opaca	P1			x		Erect, compact shrub, to 1 m high. Red sandy clay. Dunes, slopes. Dundas, Kondinin. Recorded approximately 15 km south of the Study Area.	Possible
Brachyloma stenolobum	P1			x		Shrub to 1.5 m high and 1.2 m wide, single-stemmed at ground level from a fire-sensitive rootstock. Occurs in mixed heath and *Eucalyptus eremophila* over *Melaleuca* on yellow sandplain. (GHD, 2020). Dundas, Yilgarn. Recorded within Study Area.	Recorded

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Chamelaucium sp. Parker Range (B.H. Smith 1255)[1]	P1			x		In open mallee over open shrubs or in mixed heaths. Associated with *Acacia yorkrakinensis, Grevillea pterosperma, Melaleuca hamata, Thryptomene kochii,* and *Persoonia saundersiana.* Yellow sand over laterite. Plains and gentle slopes (Phoenix Environmental Sciences, 2021). Coolgardie, Kondinin, Yilgarn. Recorded within Study Area.	Recorded
Dicrastylis capitellata	P1			x		Low spreading shrub, 0.2-0.25 m high. Fl. blue-purple, May. Loamy sand, sandy loam. Esperance, Kondinin, Yilgarn. Recorded 9 km east of southern end of Study Area.	Possible
Drummondita wilsonii	P1			x		Erect shrub, 0.4-1 m high. Fl. red; green; pink, Jun to Aug. Sand with gravel; pebbles. Yilgarn. Recorded 2.6 km west of Study Area.	Possible
Eremophila adenotricha	P1			x		Erect, bushy, viscid shrub, 0.6-1.2 m high. Fl. blue, Sep. Red/brown earth, clay. Narembeen, Westonia, Yilgarn. Recorded 55 km west of southern end of Study Area.	Unlikely
Eucalyptus retusa	P1			x		Mallee or shrub up to 4 m tall. Forming a lignotuber (CANBR, 2020). Jerramungup, Ravensthorpe, Yilgarn (predominantly near south coast) Recorded 12 km south-west of southern end of Study Area.	Unlikely
Eucalyptus sp. Dunbar Road (D. Nicolle & M. French DN 5466)	P1			x		Mallet to 12m, white smooth bark and glossy green leaves. Fruit and buds similar to E. urna but significantly smaller. Yilgarn Recorded within Study Area.	Recorded

[1] The WA Herbarium collections of *Chamelaucium* sp. Parker Range (B.H. Smith 1255) P1contain multiple species and taxonomy of this group is under revision.

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Eutaxia sp. North Ironcap (P. Armstrong PA 06/898)	P1			x		Erect spindly shrub, broom-like, growing to 0.2m tall and 0.2m wide. Recorded in shrub mallee over *Melaleuca brophyi* on undulating plain of red sandy clay loam. Kondinin. Recorded 17 km south of southern end of Study Area.	Unlikely
Glossostigma trichodes	P1			x		Aquatic annual, herb. Pools in granite. Recorded 10 km north-west of Study Area.	Possible
Goodenia heatheriana	P1			x		Annual, herb, to 0.15 m high. Fl. yellow, Sep to Oct. Red crumbly clay, greenstone gravel and cobbles. Lower slopes, moderately exposed gently undulating plain, roadsides. Yilgarn. Recorded 6.5 km north-east of Parker Range Road and Marvel Loch – Forrestania Road intersection.	Possible
Grevillea lissopleura	P1			x		Erect shrub, 0.5-1.2 m high. Fl. Aug. Stony loam on banded ironstone. On ridges. Dundas, Yilgarn. Recorded within Study Area.	Recorded
Grevillea marriottii	P1			x		Open, multi-stemmed, lignotuberous shrub, 0.8-1.2 m high. Fl. green-cream-white, Aug to Oct. Yellow or white sand over laterite. On rises or on tops of lateritic cappings. Kondinin, Yilgarn. Recorded 11 km south of southern end of Study Area.	Unlikely
Grevillea phillipsiana	P1			x		Prickly shrub, 0.8-1.5 m high. Fl. red/red & orange, Jul to Sep. Red sand, stony loam. Granite hills. Recorded 12 km north-east of Study Area.	Possible
Hemigenia sp. Newdegate (E. Bishop 75)	P1			x		Spindly, erect to spreading shrub, 0.2-0.45 m high, to 0.5 m wide. Fl. blue/purple, Sep to Oct. Clay loam. Disturbed sites. Coolgardie, Kondinin, Kulin, Lake Grace, Yilgarn. Recorded 18 km east of northern end of Study Area.	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Hibbertia sp. Mt Holland (B. Ellery BE 1437)	P1			x		Shrub to 0.4 m high x 0.8 m wide, flowers solid yellow, leaves blue-grey-green, soft, hairy. Plants may establish after soil disturbance. Cunderdin, Yilgarn. Recorded 5 km west of Study Area (southern end).	Possible
Hibbertia tuberculata	P1			x		Shrub to 0.45 m high, flowers dull yellow. Kondinin, Yilgarn. Recorded 8.4 km east-south-east of southern end of Study Area.	Possible
Hydrocotyle corynophora	P1			x		Erect, glabrous annual, herb, to about 0.25 m high, basal leaves small, conspicuously stalked, orbicular to rhomboid. Dundas, Yilgarn. Recorded 5.6 km north of Study Area (near Great Victoria Mine).	Possible
Labichea rossii	P1			x		Sub-shrub recorded growing 0.4 m high, stems sparingly branched and semi-erect. Recorded on small ironstone ridge dominated by *Allocasuarina* - Proteaceae and Myrtaceae with some eucalpyts. Grows out of cracks in large outcrops od banded ironstone, often in shade of larger shrubs (GHD, 2020). Found in the Mt Holland region on yellow sand over laterite. Yilgarn. Recorded 11.3 km south-east of southern end of Study Area.	Possible
Lepidosperma sp. Mt Caudan (N. Gibson & M. Lyons 2081)	P1			x		Perennial sedge. Recorded in the Mt Caudan area in *Eucalyptus capillosa* subsp. *polyclada* low forest over *Melaleuca uncinata*. Orange -brown sandy loam, with ironstone gravel, gentle slopes (Phoenix Environmental Sciences, 2021). Yilgarn Recorded 1 km south of Study Area within Parker Range minesite area.	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Lepidosperma sp. Parker Range (N. Gibson & M. Lyons 2094)	P1			x		Coolgardie, Menzies, Yilgarn. Recorded 250 m west of Study Area (within Parker Range minesite area).	Possible
Leucopogon validus	P1			x		Robust, lignotuberous shrub, to about 1.2 m high. Dry, brown, rocky sandy loam, brown-orange sandy clay, gravel, ironstone, sandstone. Low ranges, on and around exposed breakaways. Yilgarn. Recorded 60 m from Study Area within Parker Range minesite area.	Possible
Melaleuca grieveana	P1			x		Compact shrub, to 0.75 m high. Fl. yellow, Jul. Well-drained orange-brown loam, brown clay. Plains, gentle slopes, edge of crop paddocks. Kulin, Narembeen, Wyalkatchem, Yilgarn. Recorded 1.2 km west of Study Area (Marvel Loch – Forrestania Road section). Readily confused with the more common *Melaleuca johnsonii*.	Possible
Melichrus sp. Coolgardie (K.R. Newbey 8698)	P1			x		Compact shrub, 30 cm high x 30 cm wide. Corolla cream, sepals pale pink. Plants branching close to ground level but probably single stemmed and fire sensitive. Main populations disjunct, 120 to 150 km ENE of Study Area. Note: *Melichrus* aff. sp. Coolgardie (G. Cockerton WB40869), a shrub 0.8 m x 1.5 m, flowers white, has been recorded within the Study Area (Mt Caudan mine, Parker Range diversion road section).	Possible
Microcorys elatoides Formerly *Microcorys* sp. Mt Holland (D. Angus DA 2397)	P1			x		Perennial shrub growing 1.5 m tall and 1.2 m wide. Plant multi-stemmed at ground level from fire-tolerant rootstock. Occurs in disturbed areas on brown sandy loam, grey-brown sandy clay, orange clay and ironstone (GHD, 2020). Yilgarn. Recorded within Study Area.	Recorded

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Millotia newbeyi	P1			x		Slender, upright annual, herb, 0.05-0.1 m high. Fl. cream-yellow, Sep. Red/brown loam, red clay. Undulating plains. Yilgarn. Recorded 5.6 km north of t Study Area near Great Victoria Mine).	Possible
Philotheca apiculata	P1			x		Erect shrub, 0.5-1.5 m high. Fl. white-pink, Aug to Nov. Stony clay loam. Rocky outcrops, hillsides. Coolgardie, Dundas, Esperance, Yilgarn. Recorded 57 km west of Study Area (Marvel Loch - Forrestania Road section).	Unlikely
Rinzia fimbriolata	P1			x		Perennial woody shrub. Found around Bulfinch, Southern Cross and Mt Hampton (ALA, 2023). Yilgarn. Recorded 13 km south-west of Study Area (Parker Range Road midsection).	Possible
Rinzia medifila	P1			x		Occurs in yellow-red sandy soils, occasionally laterite or greenstone, in Eucalyptus woodlands, often with Melaleuca. Known only from Parker Range (GHD, 2020). Small shrub to 1m. Yilgarn. Recorded near boundary of Study Area (west side of Marvel Loch – Forrestania Road).	Possible
Stylidium validum	P1			x		Caespitose perennial, herb, 0.06-0.3 m high, Leaves tufted, oblanceolate, 1.5-10 cm long, 2.2-6 mm wide, apex acute to acuminate, margin entire, glabrous, glaucous. Scape glabrous. Inflorescence paniculate. Fl. white/pink, Sep to Oct. Clayey sand or loam, ironstone, greenstone gravel. Hillslopes and hilltops. Eucalypt woodland, mallee shrubland. Dundas, Kondinin, Yilgarn. Recorded 9 km south-east of southern end of Study Area.	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Thryptomene salina	P1					Spreading, moderately dense shrub, to 1.1 m high. Fl. white-pink, Oct. Deep alluvial sand. On a flat along a saline creek. Kondinin. Recorded 44 km south-west of Study Area. This species was found growing in thick S2 vegetation with tall dense *Melaleuca ?scalena* immediately north of the Earl Grey mine access road (Mattiske Consulting, 2021a). Specimen not lodged or confirmed from Earl Grey area, as it did not appear in the DBCA database searches.	Possible
Thryptomene sp. Hyden (B.J. Lepschi & L.A. Craven 4477)	P1			x		Domed shrub to about 1.2 5m high that has been observed growing in large numbers on pale brown – yellow sand along the Earl Grey Project access road and the Marvel Loch – Forrestania Road (Mattiske Consulting, 2021a). Specimens do not currently appear on DBCA database for the Earl Grey location. Nearest DBCA recorded location is 54 km west of southern end of Study Area within Narembeen LGA.	Possible
Acacia asepala	P2			x		Diffuse, much-branched shrub, 0.5-1.5 m high. Fl. yellow, Aug. Red-brown sandy loam. Undulating plains, along drainage lines. Dundas, Kondinin, Lake Grace, Yilgarn. Recorded 7.5 km north-east of the Study Area (intersection of Parker Range Road and Marvel Loch – Forrestania Road).	Possible
Acacia concolorans	P2			x		Intricate, sprawling or compact, pungent shrub, 0.1-0.5 m high. Fl. yellow, Jul to Aug. Red/brown loam, clay. Low lateritic hills, flats. Kondinin, Yilgarn. Recorded 0.9 km west of the Study Area (within Parke Range minesite area).	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Balaustion grandibracteatum subsp. *juncturum* Rye (formerly both *Baeckea* sp. Blue Haze Mine (P. Armstrong 06/910) and *Baeckea* sp. Forrestania (K.R. Newbey 1105)	P2			x		Kondinin, Yilgarn. Large flowered shrub growing to 1.2 m tall. Occurs on yellow-orange lateritic sandy clay loam on undulating plains with open mallee, low to tall shrub heath (GHD, 2020). Recorded within Study Area.	Recorded
Conospermum sigmoideum	P2			x		Erect shrub, 0.2-0.5 m high. Fl. blue, Aug to Sep. Yellow sand. Dundas, Esperance, Kondinin, Lake Grace, Yilgarn. Recorded 13 km south-east of southern end of Study Area.	Possible
Dampiera orchardii	P2			x		Erect perennial, herb, 0.2-0.4 m high. Sand. Dundas, Kent, Lake Grace, Ravensthorpe, Yilgarn. Recorded within Study Area.	Recorded
Eutaxia lasiocalyx	P2			x		Low, spreading, multi-stemmed shrub, to 0.15 m high. Fl. yellow, Nov. Red sandy loam, laterite and quartz gravel. Gentle lower slopes. Coolgardie, Kondinin, Yilgarn. Recorded 1.1 km south of Study Area (within Parker Range minesite area).	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Leucopogon sp. Yellowdine (M. Hislop & F. Hort MH 3194)	P2			x		Coolgardie, Dundas, Yilgarn. In open tall shrubland of *Allocasuarina spinosissima, Allocasuarina campestris* and *Grevillea didymobotrya* subsp. *didymobotrya* over open sedge of *Ecdeiocolea monostachya* and *Melaleuca cordata* over open hummock grassland and rushland of *Triodia rigidissima, Lepidobolus preissianus* subsp. *volubilis* and *Borya constricta*. Yellow-orange sandplain, laterite, sandy loam soil (Phoenix Environmental Sciences, 2021). Previously recorded 56 km west of the Study Area according to the DBCA WA Herbarium database search. However, Florabase indicates this species has been recorded within the Study Area (in Jilbadgi Nature Reserve).	Possible
Lissanthe scabra	P2			x		Rigid, erect, fairly densely branched shrub, to 1 m high, leaf apex aristate, upper leaf surface scabrous; flowers pedicellate above bracteoles. Fl. white, Aug. Dry, white to orange-brown clay, sandy gravel loams, granite. Breakaways, uplands. Coolgardie, Yilgarn. Recorded 5.3 km south-west of the Study Area within Frog Rock Nature Reserve.	Possible
Logania nanophylla	P2			x		Low spreading shrub, 0.1-0.25 m high, to 0.5 m wide. Fl. white, Aug. White sand, pebbly calcareous sandy clay. Sand dunes. Dundas, Yilgarn. Recorded within Study Area.	Recorded
Orianthera exilis	P2			x		Perennial herb. Fl. White. Dundas, Kondinin, Yilgarn. Recorded 8.6 km south-east of the southern end of the Study Area.	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Verticordia multiflora subsp. *solox*	P2			x		Erect to spreading shrub, 0.2-0.6 m high. Fl. yellow, Oct to Dec or Jan. Yellow sand over gravel, sand over granite. Kondinin, Merredin, Narembeen, Yilgarn. Previously recorded within Study Area.	Recorded
Verticordia pulchella	P2			x		Spreading shrub, 0.1-0.45 m high, to 0.7 m wide. Fl. red & pink/yellow/orange, Oct to Nov. Sandy soils over granite. Massive granite areas. Bruce Rock, Yilgarn. Recorded 16.5 km west of Study Area (Marvel Loch – Forrestania Road).	Possible
Acacia crenulata	P3			x		Bushy shrub or tree, 0.7-3 m high. Fl. yellow. Clay, sandy clay, yellow sand. Rocky rises, granite outcrops, breakaways. Coolgardie, Mukinbudin, Westonia, Yilgarn. Recorded 9 km west of northern end of Study Area.	Possible
Acacia desertorum var. *nudipes*	P3			x		Dense or open shrub or tree (rarely), 0.6-2 m high, phyllodes 16-nerved. Fl. yellow, Aug to Oct. Yellow sand, lateritic gravel. Sandplains, flats. Coolgardie, Yilgarn. Recorded 10 km north-east of Study Area (at Marvel Loch minesite).	Possible
Acacia filifolia	P3			x		Wispy, spindly, single-stemmed shrub or tree, 1.2-3 m high. Fl. yellow, May to Sep. Yellow sand, gravelly lateritic sand. Sandplains. Coorow, Merredin, Mount Marshall, Westonia, Wongan-Ballidu, Yilgarn. Recorded 11.5 km north-east of northern end of Study Area.	Possible
Acacia undosa	P3			x		Dense, spreading shrub, 0.3-1.5 m high. Fl. yellow, Jul to Sep. Sandy clay loam, clayey sand. Undulating plains, low-lying areas. Bruce Rock, Kent, Kondinin, Kulin, Lake Grace, Ravensthorpe, Tammin, Yilgarn. Recorded 5.5 km east of southern end of Study Area.	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Alyogyne sp. Great Victoria Desert (D.J. Edinger 6212)	P3			x		Chapman Valley, Coolgardie, Dumbleyung, Esperance, Kalgoorlie-Boulder, Menzies, Northampton, Swan, Yilgarn. Recorded at Mt Holland in 1929 with the next nearest recorded location being Lake Barker Reserve (in 1971), approximately 80 km east of the Study Area. Taxonomy of *Alyogyne* is in need of serious revision.	Unlikely
Angianthus micropodioides	P3			x		Erect or decumbent annual, herb, 0.03-0.15 m high. Fl. yellow-white, Nov to Dec or Jan to Feb. Saline sandy soils. River edges, saline depressions, claypans. Canning, Cunderdin, Dalwallinu, Dandaragan, East Fremantle, Greater Geraldton, Kellerberrin, Koorda, Melville, Morawa, Perenjori, Perth, South Perth, Wongan-Ballidu, Yilgarn. Recorded 7.5 km east of Study Area (within Jilbadgi Nature Reserve).	Possible
Austrostipa turbinata	P3			x		Grass to 20cm. Coolgardie, Dundas, Esperance, Kalgoorlie-Boulder, Kellerberrin, Kondinin, Ravensthorpe. Recorded approximately 25 km south of the Study Area.	Possible
Balaustion grandibracteatum (E.Pritz.) Rye subsp. *grandibracteatum* (formerly *Baeckea grandibracteata* subsp. Parker Range (K. Newbey 9270))	P3			x		West of Southern Cross – Yellowdine (Rye, 2022). Yilgarn *Eucalyptus* scattered mallees over *Allocasuarina* high shrubland over *Melaleuca* sp., over low open heath over *Ecdeiocolea monostachya* sedgeland over *Schoenus* low open sedgeland. Yellow sand over laterite, midslopes (Phoenix Environmental Sciences, 2021). Recorded near boundary (10 m north) of Study Area (on edge of remaining uncleared vegetation) and within Parker Range minesite.	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Banksia viscida	P3			x		Densely branched, non-lignotuberous shrub, 0.4-1 m high. Fl. yellow-orange, Jul to Oct. Gravelly soils. Lateritic rises. Kondinin, Lake Grace. Recorded approximately 19 km south of southern end of Study Area.	Unlikely
Boronia ternata var. *promiscua*	P3			x		Shrub, 0.3-2 m high. Fl. white-pink, Apr to Nov. Sand, clay, loam, gravel, laterite, limestone. Undulating plains & rises, stony cliffs, breakaways. Bruce Rock, Carnamah, Coolgardie, Dalwallinu, Dumbleyung, Dundas, Esperance, Gnowangerup, Jerramungup, Kent, Kondinin, Koorda, Kulin, Lake Grace, Merredin, Mukinbudin, Narembeen, Nungarin, Perenjori, Ravensthorpe, Three Springs, Westonia, Yilgarn. Recorded 1.2 km west of Study Area (southern section, north of King Ingram Road)	Possible
Bossiaea concinna	P3			x		Erect, prickly shrub, 0.4-1.5 m high. Fl. yellow & red/brown, Jun to Sep. White or red sand, gravel. Coolgardie, Cunderdin, Dalwallinu, Jerramungup, Tammin, Williams, Yilgarn. Recorded 58 km west of southern section of Study Area.	Possible
Chorizema circinale	P3			x		Prostrate, scrambling, wiry shrub, to 0.4 m high. Fl. yellow & orange & red, Sep to Dec. Yellow sand, sandy clay with gravel. Flats, margin of gravel pit. Esperance, Kent, Ravensthorpe, Yilgarn. Recorded within Study Area.	Recorded
Daviesia newbeyi	P3			x		Bushy, multi-stemmed, broom-like shrub, 0.25-1.5 m high. Fl. orange/yellow & red, Aug to Oct. Sand or sandy clay over granite. Rocky slopes. Esperance, Lake Grace, Ravensthorpe. Recorded 91 km south of southern end of Study Area. Inclusion in results appears to be an anomaly.	Unlikely

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Daviesia uncinata	P3			x		Intricate, many-stemmed shrub, 0.2-0.7 m high. Fl. yellow & brown, Dec or Jan. Gravelly lateritic sand, loamy sand. Undulating plains. Brookton, Bruce Rock, Corrigin, Dumbleyung, Kent, Kulin, Lake Grace, Narrogin, Pingelly, Quairading, Tammin, West Arthur, Yilgarn. Recorded 40 km west of southern end of Study Area.	Unlikely
Eucalyptus exigua	P3			x		(Mallee), 2-5 m high, bark smooth. Fl. white-cream, Mar. Sandy loam, white sand. Sandplains. Coolgardie, Dundas, Kondinin, Lake Grace, Narembeen, Yilgarn. Recorded within Study Area.	Recorded
Eucalyptus ornata	P3			x		Tree, 6-10 m high, bark smooth, grey. Fl. white. Laterite. Ridges. Kondinin, Kulin, Lake Grace, Narembeen. Recorded 54 km west of southern end of Study Area.	Unlikely
Eucalyptus polita	P3			x		Tree or (rarely mallee), 3-10 m high, bark smooth, glossy green leaves. Loam, sand. Around salt lakes, flats. Coolgardie, Dundas, Esperance, Kondinin, Yilgarn. Recorded within Study Area.	Recorded
Gompholobium cinereum	P3			x		Shrub, to 0.3 m high. Yellow sand, clayey sand, brown loam, sandy gravel, laterite. Well-drained open sites, slopes, plains, roadsides. Coolgardie, Dalwallinu, Greater Geraldton, Mount Marshall, Northampton, Perenjori, Yilgarn. Recorded 25 km south-west of Study Area.	Possible
Grevillea insignis subsp. *elliotii*	P3			x		Erect, bushy, non-lignotuberous shrub, 1-2 m high. Fl. red/pink & cream & white, Oct. Gravelly sand or loam over ironstone. Hilltops or rises. Kondinin, Lake Grace, Narembeen. Recorded 54 km west of southern end of Study Area.	Unlikely

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Grevillea pilosa subsp. *redacta*	P3			x		Spreading to prostrate, non-lignotuberous shrub, 0.4-1.2 m high. Fl. red, Feb or Oct or Dec. Sand, laterite. Kondinin, Kulin, Lake Grace, Yilgarn. Recorded 1.4 km south-east of the southern end of the Study Area.	Possible
Hakea pendens	P3			x		Shrub, 2-3 m high, 2.5-3.1 m wide. Fl. pink-white, Sep. Stony loam. Ironstone ridges. Dundas, Yilgarn. Recorded within Study Area.	Recorded
Lepidium genistoides	P3			x		Spreading, dense shrub, 0.25-0.6 m high. Fl. white, Sep to Oct. Sandy loam. Dalwallinu, Koorda, Merredin, Mount Marshall, Mukinbudin, Westonia, Wyalkatchem, Yilgarn. Recorded 7.3 km north-east of Study Area.	Possible
Lepidosperma sp. Pigeon Rocks (H. Pringle 30237)	P3			x		Perennial sedge. Granite rock, granitic sandy loam. Coolgardie, Lake Grace, Menzies, Yilgarn. Recorded 16.5 km north-west of northern end of Study Area.	Unlikely
Styphelia subglauca (previously *Leucopogon* sp. Ironcaps (N. Gibson & K. Brown 3070))	P3			x		Erect shrub to 0.8m high with white flowers. Sand over laterite. Kondinin, Merredin, Narembeen, Yilgarn. Recorded 47 km west of Study Area in Welsh Nature Reserve.	Unlikely
Melaleuca ochroma	P3			x		Kondinin, Lake Grace, Yilgarn. Shrub growing 0.7 to 2.5 m tall. Bark is hard and fibrous. Occurs within *Melaleuca* shrubland, containing emergent mallee eucalypts and Wandoo, *Grevillea huegelii* over brown clay, whitish sandy-clay, brown clay loam and sandy loam (GHD, 2020). Recorded 900 m west of Study Area, adjacent Jilbadgi Nature Reserve.	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Notisia intonsa	P3			x		Herbaceous annual to 4cm. Coolgardie, Dundas, Kalgoorlie-Boulder, Kondinin, Menzies, Ravensthorpe, Yilgarn. Recorded within Study Area.	Recorded
Oxymyrrhine plicata	P3			x		Spreading shrub to 0.4m tall with white flowers. Esperance, Kondinin, Kulin, Lake Grace. Recorded 22 km south-east of southern end of Study Area.	Possible
Persoonia cymbifolia	P3			x		Erect, spreading shrub, 0.2-0.6(-1) m high. Fl. yellow, Dec or Jan. Sandy soils. On flats or in rock crevices. Esperance, Lake Grace, Yilgarn. Recorded 9.3 km south-west of southern end of Study Area.	Unlikely
Pultenaea daena	P3			x		Dense, prostrate, domed shrub, to 0.07 m high. Fl. yellow, Mar. White to yellow sand or sandy loam, sandy or loamy clay, gravel, limestone, dolomite, laterite. Gently undulating plains, adjacent to salt lakes, in disturbed areas. Recorded 32 km south of southern end of Study Area.	Unlikely
Phlegmatospermum eremaeum	P3			x		Prostrate to spreading annual, herb, 0.02-0.1(-0.2) m high. Fl. white-cream, Jun or Aug to Oct. Stony loam. Coolgardie, Dundas, Esperance, Kalgoorlie-Boulder, Narembeen, Ravensthorpe, Yilgarn. Recorded 16 km east of Study Area (within Battler Mine tenement, south-east of Southern Cross).	Possible
Rinzia torquata	P3			x		Shrub 1.4 m tall and 1.5 m across Kondinin, Kulin, Lake Grace, Merredin, Narembeen, Yilgarn. Recorded within Mt Parker Range minesite, approximately 500 m from Study Area.	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Rinzia triplex	P3			x		Coolgardie, Menzies, Yilgarn. Perennial shrub growing to 1 m high and 0.6 m wide. Occurs on flat and undulating plains of yellow sandy clay loam with lateritic gravel (GHD, 2020). Previously recorded on boundary of Study Area (within privately owned agricultural land).	Recorded
Seringia adenogyna	P3			x		Low shrub. Albany, Dundas, Esperance, Gnowangerup, Jerramungup, Kondinin, Lake Grace, Yilgarn. Recorded 6.4 km south-east of southern end of Study Area.	Possible
Stylidium choreanthum	P3			x		Creeping perennial, herb, 0.01-0.03 m high, to 0.3 m wide. Fl. pink/white, Sep to Nov. White/yellow or red sand. Plains. Coolgardie, Menzies, Yilgarn. Recorded 10.5 km west of Study Area (near Moorine South Road).	Possible
Stylidium sejunctum	P3			x		Caespitose perennial, herb, 0.25-0.45 m high, Leaves tufted, linear to narrowly oblanceolate, 10-30 cm long, 0.8-4 mm wide, apex acute to mucronate, margin involute, glabrous to scabrous. Membranous scale leaves present at base of mature leaves. Scape glandular throughout. Inflorescence paniculate. Fl. white/pink-purple, Sep to Nov. Clayey sand or loam, laterite. Outcrops, upper slopes, breakaways. Mallee and Allocasuarina shrubland. Dundas, Esperance, Kondinin, Kulin, Lake Grace, Yilgarn. Recorded 8.7 km south-east of southern end of Study Area.	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Teucrium diabolicum	P3			x		Dundas, Esperance, Kondinin, Yilgarn. Virgate, perennial subshrub, c. 10–20 cm high, suckering from a thick woody rootstock. Fl. white in Autumn and Spring. Known from a small number of locations in Western Australia's Coolgardie bioregion, mostly between Hyden and Norseman but with one record from near Southern Cross. It grows in red cracking clay or clay loam, usually in shallow depressions or on low undulating plains that support low scrub or heath, or in association with low open woodland (Wege and Davis, 2020). Recorded 22 km east of northern end of Study Area.	Possible
Verticordia gracilis	P3			x		Low, slender shrub, 0.15-0.6 m high. Fl. pink, Oct to Nov. Yellow sand, gravelly sand, sandy loam. Kondinin, Lake Grace, Merredin, Yilgarn. Recorded within Study Area.	Recorded
Verticordia mitodes	P3			x		Spreading shrub, 0.15-0.7 m high. Fl. pink-purple, Oct to Dec or Jan. Yellow sand. Undulating plains. Coolgardie, Merredin, Narembeen, Nungarin, Westonia, Yilgarn. Previously recorded within Study Area.	Recorded
Verticordia stenopetala	P3			x		Shrub, 0.2-0.6(-1.3) m high. Fl. pink/pink-purple-red, Oct to Dec or Jan. Yellow sand, sometimes with gravel. Undulating plains. Previously recorded within Study Area.	Recorded
Banksia shanklandiorum	P4			x		Upright, non-lignotuberous shrub, 0.4-2.5 m high, to 3 m wide. Fl. Jun to Aug. White/yellow sand with lateritic gravel. Dowerin, Merredin, Narembeen, Westonia, Wongan-Ballidu, Yilgarn. Recorded 1.4 km west of Study Area (on the track to Parker Rang South).	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Eremophila biserrata	P4			x		Prostrate shrub, to 3 m wide. Fl. green/yellow-green, Sep to Nov or Mar. Sandy or sandy clay soils. Alluvial flats, salt flats and lakes. Esperance, Kondinin, Lake Grace. Recorded 18 km south-east of southern end of Study Area.	Possible
Eremophila caerulea subsp. *merrallii*	P4			x		Spreading or sprawling shrub, to 0.35 m high, to 0.8 m wide. Fl. blue-purple, Oct to Dec. Sand, clay or loam. Undulating plains. Bruce Rock, Coolgardie, Kulin, Yilgarn. Recorded 2.3 km west of Study Area within Jilbadgi Nature Reserve.	Possible
Eremophila inflata (formerly *Calamphoreus inflatus*)	P4			x		Kondinin, Lake Grace, Yilgarn. Erect shrub 0.5 – 3 m tall, occurs in light brown clay loam often with a stony surface, in *Eucalyptus* woodland (Gimlet and *E. longicornis*). Occurs in open areas and on disturbed soils (GHD, 2020). Previously recorded 2.1 km east of the Study Area.	Possible
Eremophila racemosa	P4			x		Erect shrub, 0.5-1.7 m high. Fl. purple-pink-red/white, Mar or Aug to Dec. Sandy or stony loam, clay loam. Undulating plains, roadsides. Dundas, Esperance, Kondinin, Yilgarn. Recorded 7 km south-west of southern end of Study Area.	Possible
Eremophila serpens	P4			x		Prostrate, creeping, forming large patches shrub, 0.03-0.4 m high, forming large patches to 2 m wide. Fl. green/yellow-green, Sep to Dec or Mar to May. White/grey sand, alluvium, loam. Winter-wet depressions, sub-saline flats, drainage lines, salt lakes. Dundas, Esperance, Jerramungup, Kent, Kondinin, Lake Grace, Yilgarn. Recorded 36.4 km west of Study Area (near boundary of cleared agricultural area)	Possible

Taxon	Conservation rank			Database source		Description, habitat and current known distribution (local government areas) (WAH, 1998-; DBCA, 2022f)	Likelihood within Study Area
	DBCA	BC Act	EPBC Act	TPFL/ WAH	PMST		
Eucalyptus georgei subsp. *fulgida*	P4			x		Tree, 4-20 m high, bark smooth, often hanging in ribbons. Fl. cream-white. Sandy loam, clayey sand. Slight depressions. Dundas, Kondinin, Lake Grace, Yilgarn. Recorded 8.6 km south-east of southern end of Study Area.	Possible
Grevillea neodissecta	P4			x		Coolgardie, Dundas, Kondinin, Yilgarn. Low, rounded prickly shrub growing to 0.3 – 1 m tall. Occurring on sand over laterite, and clay loam (GHD, 2020). Recorded 5.9 km east of Study Area within Jilbadgi Nature Reserve.	Possible
Gyrostemon ditrigynus	P4			x		Shrub, 0.4-1.5 m high. Sand, sandy clay, loam. Plains, low ironstone ridges. Dundas, Esperance, Kondinin, Kulin, Lake Grace, Ravensthorpe, Yilgarn. Recorded 9.3 km south-east of southern end of Study Area.	Possible
Microcorys sp. Forrestania (V. English 2004)	P4			x		Prostrate or erect shrub, 0.35-0.4 m high. Fl. white/purple, Jan or Apr. Yellow sandy clay or red-brown clay. Open woodland or cleared areas. Kondinin, Yilgarn. Recorded 9 km south-east of southern end of Study Area.	Possible
Myriophyllum petraeum	P4			x		Aquatic annual, herb, stems 0.15-0.3 m long. Fl. white, Aug to Dec. Strictly confined to ephemeral rock pools on granite outcrops. Coolgardie, Dundas, Esperance, Kondinin, Lake Grace, Narembeen, Westonia, Yilgarn. Recorded within Study Area.	Recorded
Stenanthemum bremerense	P4			x		Erect or low and spreading shrub, (0.2-)0.3-0.6(-1.4) m high. Orange-brown sandy loam, orange-red gravelly loam, skeletal red loam, laterite, ironstone. Top or sides of outcrops and breakaways. Dundas, Esperance, Yilgarn. Recorded 6.8 km south-east of southern end of Study Area.	Possible

4.1.2. Threatened and Priority Ecological Communities

The Study Area intersects the mapped buffer zones of three ecological communities of conservation significance (DBCA, 2022d) (Figure 9):

- 'Ironcap Hills vegetation assemblages (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill) (banded ironstone formation)' PEC (Priority 3);
- 'Plant Assemblages of the Parker Range System' PEC (Priority 3); and
- 'Eucalypt Woodland of the Western Australian Wheatbelt' PEC (Priority 3). This PEC is synonymous with the Commonwealth listed TEC under the *EPBC Act*.

A fourth PEC is located approximately 2.7 km west of the Study Area within the Frog Rock Nature Reserve (Figure 9); 'Granite outcrop pools with endemic aquatic fauna' PEC (Priority 3).

A section of the Study Area (~160 ha) along the Marvel Loch Road -Forrestania Road falls within the mapped buffer zone of the 'Ironcap Hills vegetation assemblages' PEC (Figure 9). The Mt Holland/Earl Grey mine is located within the buffer of this PEC however flora and vegetation surveys conducted by Mattiske Consulting (2018) across the site found that none of the landforms or corresponding species communities associated with the PEC were present.

The 'Ironcap Hills vegetation assemblages' PEC is characterised as assemblages on skeletal soils derived from banded ironstone and massive laterites on deeper soils derived from greenstone or decomposing laterites and includes the following vegetation units as described in Gibson (2004):

- species-rich shrublands and mallee shrubland on massive outcrops;
- mallee shrublands and *Allocasuarina* thickets on massive laterite;
- Eucalypt woodlands of *Eucalyptus urna* and *E. salubris* on colluvial flats beneath outcrops or on broad flat ridges, with understorey of *Melaleuca* spp;
- species-poor mallee community dominated by *Eucalyptus calycogona* with emergent *E. salmonophloia* (or occasionally *E. longicornis*) on small colluvial flats in the ranges (DBCA, 2022e).

Approximately 3,760 ha of the Study Area lies within the 'Plant Assemblages of the Parker Range System' PEC buffer (Figure 9). This PEC includes all the vegetation units of the Parker Range, as originally described in Beard (1979), including:

- *Eucalyptus sheathiana* with *E. transcontinentalis* and/or *E. eremophila* (now *E. tenera* or *E. tephroclada* in this region) woodland on sandy soils at the base of ridges and low rises;
- *E. longicornis with E. corrugata* and *E. salubris* or *E. myriadena* woodland on broad flats;
- *E. salmonophloia* and *E. salubris* woodland on broad flats;
- *Allocasuarina acutivalvis* and *A. corniculata* on deeper sandy soils of lateritic ridges;

- *E. capillosa* (formerly subsp. *polyclada*) and/or *E. loxophleba* (now subsp. *lissophloia*) over *Hakea pendens* thicket on skeletal soils on ridges (laterites, breakaways and massive gossanous caps); and
- *Callitris glaucophylla* low open woodland on massive greenstone ridges (vegetation units as described in Gibson and Lyons, 1998) (DBCA, 2022e).

Within the boundary of the Jilbadgi Nature Reserve, approximately 202 ha of the Study Area intersects the buffer of the 'Eucalypt Woodland of the Western Australian Wheatbelt' PEC/TEC (Figure 9). This PEC/TEC occurs in the IBRA Avon Wheatbelt 1 and 2 and Western Mallee subregions. It also includes outlying patches in the eastern parts of JAF01 Northern Jarrah Forests and JAF02 Jarrah Forests adjacent to the Avon Wheatbelt, that are off the Darling Range, and receive less than 600 mm mean annual rainfall (DBCA, 2022e).

The PEC/TEC is a woodland in which the minimum mature crown cover of the tree canopy is 10%. The key dominant or co-dominant species of the tree canopy are species of *Eucalyptus* trees that typically have a single trunk - most commonly Salmon Gum (*Eucalyptus salmonophloia*), York Gum (*Eucalyptus loxophleba*), Red Morrel (*Eucalyptus longicornis*) or Gimlet (*Eucalyptus salubris*). Several of the other emergent eucalypt species which may be present as a defining species (e.g. Kondinin Blackbutt (*E. kondininensis*), *E. myriadena*, Salt River Gum (*E. sargentii*), Silver Mallet (*E. ornata*) and Mallet (*E. singularis*) are found only in the WA Wheatbelt. Native understorey is present but is of variable composition, being a combination of grasses, other herbs and shrubs (DoE, 2015).

The mapping of this PEC/TEC within WA represents the indicative present distribution of the ecological community. Ground-truthing is required to verify if a particular site meets the required diagnostic characteristics and minimum condition and size thresholds to be deemed to be the described PEC/TEC (DBCA, 2022e).

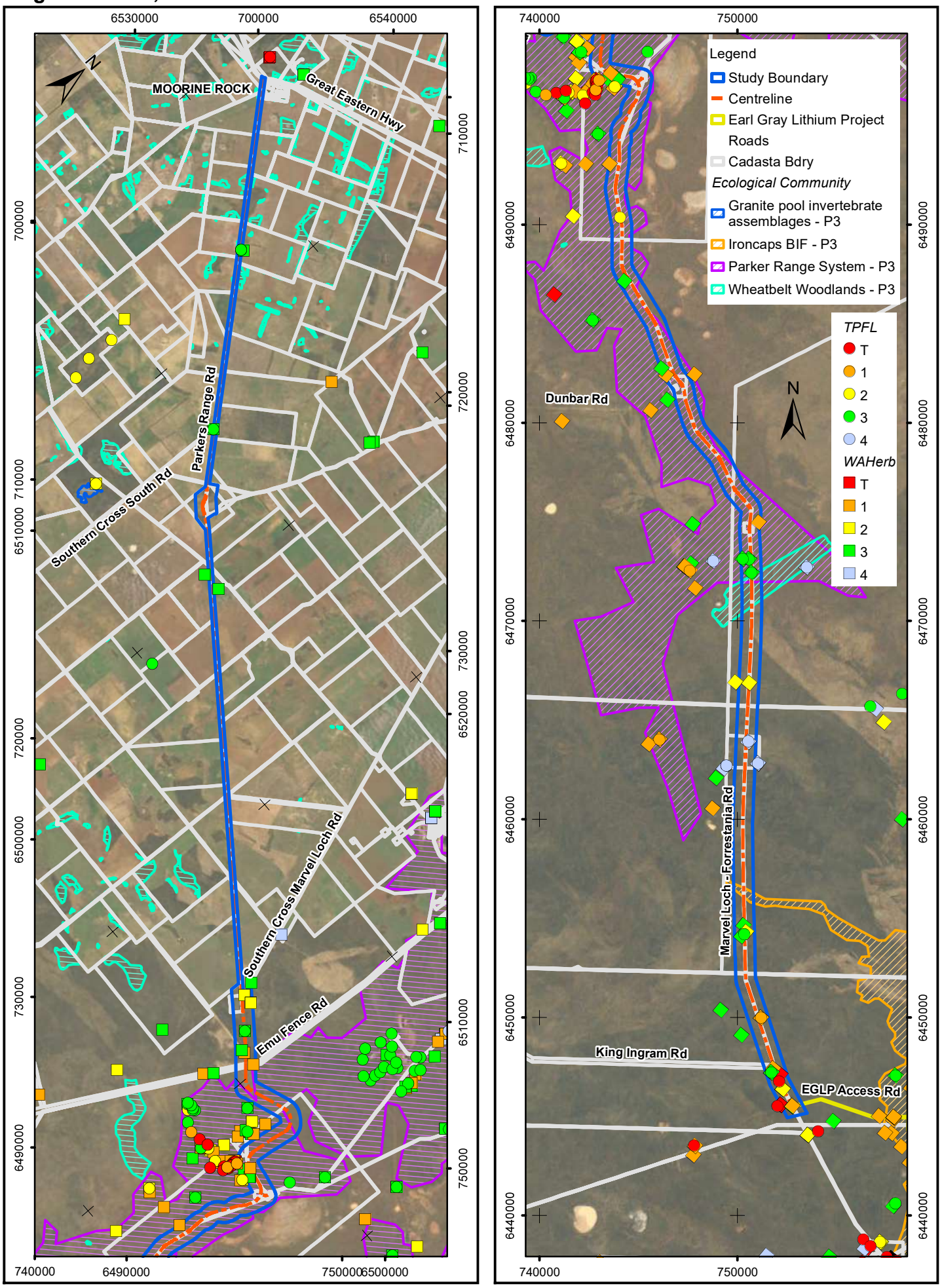
The 'Granite outcrop pools with endemic aquatic fauna' PEC, located approximately 2.7 km from the Study Area within the Frog Rock Nature Reserve, relates to the freshwater pool that may form on the granite outcrop (Frog Rock). Such pools may persist for several months and house a variety of aquatic invertebrates, some of which are endemic to south-west WA (DBCA, 2022e). This landform occurs within the Wockallarry Nature Reserve, bisected by the Parker Range Road, within the Study Area.

4.1.3. Invasive Species

Within the Shire of Yilgarn there are currently 48 flora taxa listed as Declared Pests under Section 22(2) of the BAM Act (DPIRD, 2023c). This includes 29 taxa which are listed as Weeds of National Significance (WoNS) (DAWE, 2023b) (Appendix 5). The literature review of botanical surveys conducted in the area (Table 6) indicated no Declared Pests or WoNS to have been recorded. A weed survey of areas of disturbance within the Earl Grey Lithium Project development envelope, conducted by Mattiske Consulting between 2019 – 2020, recorded 16 weed species across the site, of which **Carrichtera annua* (Wards Weed) was the most widespread.

Figure 9. Regional Threatened and Priority Flora and Priority Ecological Communities

Earl Grey Lithium Project
Parkers Range Rd and Marvel Loch-Forrestonia Rd Upgrade
Regional TPFL, WAHerb and PEC



Drawn: CAD Resources (08 9246 3242), Date: Mar 2023, CAD Ref: a2765_MR_MTH_31_05, Rev: A
Scale 1:250,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, Flora: DBCA

0 5km

5. Summary

The information collated from the desktop assessment of the Study Area can be summarised as follows:

- The Study Area intersects the Merredin subregion (AVW-01) of the Avon Wheatbelt bioregion and the Southern Cross subregion (COO-02) of the Coolgardie bioregion. Average annual rainfall is 292.8 mm with monthly rainfall peaking from late autumn throughout winter (BoM, 2023a).

- Located across three regolith and seven bedrock geological units (DMIRS, 2018a; 2018b). The Study Area intersects 13 soil landscape zones (DPIRD, 2023a), which are dominated by the AC1 atlas system (~40% of the Study Area), DD15 atlas system (~19%) and the Ya28 atlas system (~15%).

- Groundwater salinities in the Study Area range predominantly from 14,000 mg/L to 35,000 mg/L (highly saline). Where the Study Area intersects paleochannels (associated with salt lakes) around the Moorine Rock townsite and a section extending approximately 7.8 km south along the Marvel Loch-Forrestania Road from the Parker Range Road intersection, groundwater salinity is >35,000 mg/L (brine) (DWER, 2023a).

- The Study Area is located across two hydrological zones; Northern Zone of Ancient Drainage and Southern Cross Zone (majority of Study Area). It is located entirely within the Avon River Basin in the Swan Avon/Yilgarn hydrographic catchment and traverses the Lake Julia (northern end of Study Area), Yellowdine (mid-section) and Lake Eva (southern end) hydrographic sub-catchments (DPIRD, 2023b).

- Thirteen pre-European vegetation system associations occur across the Study Area (where vegetation remains) with the majority pertaining to Eucalypt woodlands or mallee. The dominant pre-European vegetation associations include Parker_1068 (41% of the Study Area vegetation), Skeleton Rock_519 (11%) and Skeleton Rock_1068 (8%).

- The majority of the Study Area has been mapped as having a low to moderate potential for supporting a terrestrial GDE. The northern end of the Study Area (1 km section at the junction with Great Eastern Highway) is mapped as having a high potential where vegetation remains intact surrounding the Moorine Rock townsite and the granite outcrop located on the northern side of Great Eastern Highway (BoM, 2023b).

- The nearest significant wetland, as listed under the Directory of Important Wetlands in Australia (DBCA, 2023b) is Lake Cronin, located approximately 32 km south of the Study Area.

- The Study Area intersects three ESAs: (i) Jilbadgi Nature Reserve which is listed on the Register of the National Estate; and (ii) Marvel Loch – Forrestania road, roadside vegetation supporting *Banksia dolichostyla* (T) between the intersection of Kind Ingram Road and the turnoff to the minesite; and (iii) the Commonwealth listed 'Eucalypt Woodland of the Western Australian Wheatbelt' TEC under the *EPBC Act* (which is synonymous with the State listed PEC of the same name).

- Database searches (state and national) and the literature review indicate 126 flora taxa of conservation significance have been recorded (or may occur) within a 50 km radius of the Study Area. A total of 20 taxa of conservation significance (one Threatened, five Priority 1, four Priority 2, nine Priority 3 and one Priority 4) have been recorded within the boundary of the Study Area with an additional 66 taxa (three Threatened, 24 Priority 1, eight Priority 2, 20 Priority 3 and 11 Priority 4) assessed as having the potential to occur within the Study Area.

- The Study Area intersects the mapped buffer zones of three ecological communities of conservation significance (DBCA, 2022d);
    - 'Ironcap Hills vegetation assemblages (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill) (banded ironstone formation)' PEC (Priority 3);
    - 'Plant Assemblages of the Parker Range System' PEC (Priority 3); and
    - 'Eucalypt Woodland of the Western Australian Wheatbelt' PEC (Priority 3). This PEC is synonymous with the Commonwealth listed TEC (of the same name) under the *EPBC Act*.

  The 'Granite outcrop pools with endemic aquatic fauna' PEC (Priority 3) is located within the Frog Rock Nature Reserve, approximately 2.7 km from the Study Area. This may also occur on the granite outcrop at the Wockallarry Nature Reserve, within the Study Area.

- The Study Area is located within the western boundary of the Great Western Woodlands until it enters the extensively cleared agricultural zone along Parker Range Road.

- Within the Shire of Yilgarn there are 48 flora taxa listed as Declared Pests, including 29 taxa which are listed as Weeds of National Significance (DAWE, 2023b). The literature review of botanical surveys conducted in the area indicated no Declared Pests or WoNS to have been recorded.

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Appendix 1. Department of Biodiversity Conservation and Attractions (DBCA) Framework for Conservation Significant Flora

DBCA Conservation Codes for Western Australian Flora

Under the Wildlife Conservation Act 1950, the Minister for the Environment may declare species of flora to be protected if they are considered to be in danger of extinction, rare or otherwise in need of special protection.

Specially protected flora are species which have been adequately searched for and are deemed to be, in the wild, either rare, at risk of extinction, or otherwise in need of special protection, and have been gazetted as such.
Categories of specially protected flora are:

T Threatened species

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the Biodiversity Conservation Act 2016 (BC Act).

Threatened fauna is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for Threatened Fauna.

Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the Wildlife Conservation (Rare Flora) Notice 2018 for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines".

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for critically endangered fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for critically endangered flora.

EN Endangered species

Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines".

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for endangered fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for endangered flora.

VU Vulnerable species

Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines".

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for vulnerable fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for vulnerable flora.

Extinct species

Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.

EX Extinct species

Species where "there is no reasonable doubt that the last member of the species has died", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for extinct fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for extinct flora.

EW Extinct in the wild species

Species that "is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018.

CD Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act). Published as conservation dependent fauna under schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018.

OS Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018.

P Priority species

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

1 Priority 1: Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

2 Priority 2: Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

3 Priority 3: Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

4 Priority 4: Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Last updated 3 January 2019

Appendix 2. DBCA Definitions of Threatened Ecological Communities (TECs) and Priority Ecological Communities (PECs)

DEFINITIONS, CATEGORIES AND CRITERIA FOR THREATENED AND PRIORITY ECOLOGICAL COMMUNITIES

1. GENERAL DEFINITIONS

Ecological Community

A naturally occurring biological assemblage that occurs in a particular type of habitat.

Note: The scale at which ecological communities are defined will often depend on the level of detail in the information source, therefore no particular scale is specified.

A **threatened ecological community** (TEC) is one which is found to fit into one of the following categories; "presumed totally destroyed", "critically endangered", "endangered" or "vulnerable".

Possible threatened ecological communities that do not meet survey criteria are added to DEC's Priority Ecological Community Lists under Priorities 1, 2 and 3. Ecological Communities that are adequately known, are rare but not threatened, or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

An **assemblage** is a defined group of biological entities.

Habitat is defined as the areas in which an organism and/or assemblage of organisms lives. It includes the abiotic factors (e.g. substrate and topography), and the biotic factors.

Occurrence: a discrete example of an ecological community, separated from other examples of the same community by more than 20 meters of a different ecological community, an artificial surface or a totally destroyed community.

By ensuring that every discrete occurrence is recognised and recorded future changes in status can be readily monitored.

Adequately Surveyed is defined as follows:

"An ecological community that has been searched for thoroughly in most likely habitats, by relevant experts."

Community structure is defined as follows:

"The spatial organisation, construction and arrangement of the biological elements comprising a biological assemblage" (e.g. Eucalyptus salmonophloia woodland over scattered small shrubs over dense herbs; structure in a faunal assemblage could refer to trophic structure, e.g. dominance by feeders on detritus as distinct from feeders on live plants).

Definitions of Modification and Destruction of an ecological community:

Modification: "changes to some or all of ecological processes (including abiotic processes such as hydrology), species composition and community structure as a direct or indirect result of human activities. The level of damage involved could be ameliorated naturally or by human intervention."

Destruction: "modification such that reestablishment of ecological processes, species composition and community structure within the range of variability exhibited by the original community is unlikely within the foreseeable future even with positive human intervention."

Note: Modification and destruction are difficult concepts to quantify, and their application will be determined by scientific judgment. Examples of modification and total destruction are cited below:

Modification of ecological processes: The hydrology of Toolibin Lake has been altered by clearing of the catchment such that death of some of the original flora has occurred due to dependence on fresh water. The system may be bought back to a semblance of the original state by redirecting saline runoff and pumping waters of the rising water table away to restore the hydrological balance. Total destruction of downstream lakes has occurred due to hydrology being altered to the point that few of the original flora or fauna species are able to tolerate the level of salinity and/or water logging.

Modification of structure: The understorey of a plant community may be altered by weed invasion due to nutrient enrichment by addition of fertiliser. Should the additional nutrients be removed from the system the balance may be restored, and the original plant species better able to compete. Total destruction may occur if additional nutrients continue to be added to the system causing the understorey to be completely replaced by weed species, and death of overstorey species due to inability to tolerate high nutrient levels.

Modification of species composition: Pollution may cause alteration of the invertebrate species present in a freshwater lake. Removal of pollutants may allow the return of the original inhabitant species. Addition of residual highly toxic substances may cause permanent changes to water quality, and total destruction of the community.

Threatening processes are defined as follows:

"Any process or activity that threatens to destroy or significantly modify the ecological community and/or affect the continuing evolutionary processes within any ecological community."

Examples of some of the continuing threatening processes in Western Australia include: general pollution; competition, predation and change induced in ecological communities as a result of introduced animals; competition and displacement of native plants by introduced species; hydrological changes; inappropriate fire regimes; diseases resulting from introduced microorganisms; direct human exploitation and disturbance of ecological communities.

Restoration is defined as returning an ecological community to its pre-disturbance or natural state in terms of abiotic conditions, community structure and species composition.

Rehabilitation is defined as the re-establishment of ecological attributes in a damaged ecological community although the community will remain modified.

2. DEFINITIONS AND CRITERIA FOR PRESUMED TOTALLY DESTROYED, CRITICALLY ENDANGERED, ENDANGERED AND VULNERABLE ECOLOGICAL COMMUNITIES

Presumed Totally Destroyed (PD)

An ecological community that has been adequately searched for but for which no representative occurrences have been located. The community has been found to be totally destroyed or so extensively modified throughout its range that no occurrence of it is likely to recover its species composition and/or structure in the foreseeable future.

An ecological community will be listed as presumed totally destroyed if there are no recent records of the community being extant **and either** of the following applies (A or B):

A) Records within the last 50 years have not been confirmed despite thorough searches of known or likely habitats or

B) All occurrences recorded within the last 50 years have since been destroyed

Critically Endangered (CR)

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or that was originally of limited distribution and is facing severe modification or destruction throughout its range in the immediate future, or is already severely degraded throughout its range but capable of being substantially restored or rehabilitated.

An ecological community will be listed as **Critically Endangered** when it has been adequately surveyed and s found to be facing an extremely high risk of total destruction in the immediate future. This will be determined on the basis of the best available information, by it meeting any one or more of the following criteria (A, B or C):

A) The estimated geographic range, and/or total area occupied, and/or number of discrete occurrences since European settlement have been reduced by at least 90% and either or both of the following apply (i or ii):

i) geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is imminent (within approximately 10 years);

ii) modification throughout its range is continuing such that in the immediate future (within approximately 10 years) the community is unlikely to be capable of being substantially rehabilitated.

B) Current distribution is limited, and one or more of the following apply (i, ii or iii):

i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the immediate future (within approximately 10 years);

ii) there are very few occurrences, each of which is small and/or isolated and extremely vulnerable to known threatening processes;

iii) there may be many occurrences but total area is very small and each occurrence is small and/or isolated and extremely vulnerable to known threatening processes.

C) The ecological community exists only as highly modified occurrences that may be capable of being rehabilitated if such work begins in the immediate future (within approximately 10 years).

Endangered (EN)

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or was originally of limited distribution and is in danger of significant modification throughout its range or severe modification or destruction over most of its range in the near future.

An ecological community will be listed as **Endangered** when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. This will be determined on the basis of the best available information by it meeting any one or more of the following criteria (A, B, or C):

A) The geographic range, and/or total area occupied, and/or number of discrete occurrences have been reduced by at least 70% since European settlement and either or both of the following apply (i or ii):

i) the estimated geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is likely in the short term future (within approximately 20 years);

ii) modification throughout its range is continuing such that in the short term future (within approximately 20 years) the community is unlikely to be capable of being substantially restored or rehabilitated.

B) Current distribution is limited, and one or more of the following apply (i, ii or iii):

i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the short term future (within approximately 20 years);

ii) there are few occurrences, each of which is small and/or isolated and all or most occurrences are very vulnerable to known threatening processes;

iii) there may be many occurrences but total area is small and all or most occurrences are

small and/or isolated and very vulnerable to known threatening processes.

C) The ecological community exists only as very modified occurrences that may be capable of being substantially restored or rehabilitated if such work begins in the short-term future (within approximately 20 years).

Vulnerable (VU)

An ecological community that has been adequately surveyed and is found to be declining and/or has declined in distribution and/or condition and whose ultimate security has not yet been assured and/or a community that is still widespread but is believed likely to move into a category of higher threat in the near future if threatening processes continue or begin operating throughout its range.

An ecological community will be listed as **Vulnerable** when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing a high risk of total destruction or significant modification in the medium (within approximately 50 years) to long-term future. This will be determined on the basis of the best available information by it meeting **any one or more** of the following criteria (A, B or C):

A) The ecological community exists largely as modified occurrences that are likely to be capable of being substantially restored or rehabilitated.

B) The ecological community may already be modified and would be vulnerable to threatening processes, is restricted in area and/or range and/or is only found at a few locations.

C) The ecological community may be still widespread but is believed likely to move into a category of higher threat in the medium to long-term future because of existing or impending threatening processes

3. DEFINITIONS AND CRITERIA FOR PRIORITY ECOLOGICAL COMMUNITIES

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the Priority Ecological Community List under priorities 1, 2 and 3. These three categories are ranked in order of priority for survey and/or definition of the community. Ecological communities that are adequately known, and are rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

Priority One: Poorly-known ecological communities

Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤5 occurrences or a total area of ≤ 100ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.

Priority Two: Poorly-known ecological communities

Communities that are known from few occurrences with a restricted distribution (generally ≤10 occurrences or a total area of ≤200ha). At least some occurrences are not believed to be under immediate threat (within approximately 10 years) of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.

Priority Three: Poorly known ecological communities

(i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:

(ii) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat (within approximately 10 years), or;

(iii) communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, inappropriate fire regimes, clearing, hydrological change etc.

Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.

Priority Four: Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.

(i) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands.

(ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for a higher threat category.

(iii) Ecological communities that have been removed from the list of threatened communities during the past five years.

Priority Five: Conservation Dependent ecological communities

Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

(Department of Environment and Conservation January 2013)

Appendix 3. Protected Matters Search Tool Results

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Nov-2022

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	37
Listed Migratory Species:	6

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	14
Commonwealth Heritage Places:	None
Listed Marine Species:	10
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	36
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	17
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	State	Legal Status	Buffer Status
Historic			
Goldfields Water Supply Scheme, Western Australia	WA	Listed place	In feature area

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Eucalypt Woodlands of the Western Australian Wheatbelt	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Falco hypoleucos			
Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Leipoa ocellata			
Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pezoporus occidentalis			
Night Parrot [59350]	Endangered	Species or species habitat may occur within area	In feature area
Zanda latirostris listed as Calyptorhynchus latirostris			
Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
MAMMAL			
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phascogale calura Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
PLANT			
Acacia lanuginophylla Woolly Wattle [55575]	Endangered	Species or species habitat known to occur within area	In feature area
Banksia mimica Summer Honeypot [82765]	Endangered	Species or species habitat may occur within area	In buffer area only
Banksia sphaerocarpa var. dolichostyla Ironcaps Banksia, Ironcap Banksia [10518]	Vulnerable	Species or species habitat known to occur within area	In feature area
Boronia adamsiana Barbalin Boronia [16935]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Boronia revoluta Ironcap Boronia [9167]	Endangered	Species or species habitat may occur within area	In buffer area only
Caladenia graniticola Pingaring Spider-orchid, Granite Spider-orchid [84996]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat may occur within area	In buffer area only
Calectasia pignattiana Stilted Tinsel Lily [82018]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dasymalla axillaris Native Foxglove [38829]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Daviesia microcarpa Norseman Pea [56766]	Endangered	Species or species habitat known to occur within area	In feature area
Eremophila resinosa Resinous Eremophila [11735]	Endangered	Species or species habitat known to occur within area	In feature area
Eremophila verticillata Whorled Eremophila [7032]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Eremophila virens Campion Eremophila, Green-flowered Emu bush [21433]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Eremophila viscida Varnish Bush [2394]	Endangered	Species or species habitat known to occur within area	In feature area
Eucalyptus brevipes Mukinbudin Mallee [7495]	Endangered	Species or species habitat may occur within area	In buffer area only
Eucalyptus crucis subsp. crucis Silver Mallee [4474]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eucalyptus steedmanii Steedmans Gum [15393]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Frankenia parvula Short-leaved Frankenia [20872]	Endangered	Species or species habitat known to occur within area	In buffer area only
Gastrolobium diabolophyllum Bodallin Poison [78384]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Gastrolobium graniticum Granite Poison [14872]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Isopogon robustus Robust Coneflower [82646]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Melaleuca sciotostyla Wongan Melaleuca [24324]	Endangered	Species or species habitat may occur within area	In buffer area only
Paragoodia crenulata [86387]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Philotheca falcata Sickle-leaved Waxflower [64943]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Ricinocarpos brevis [82879]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Roycea pycnophylloides Saltmat [21161]	Endangered	Species or species habitat likely to occur within area	In feature area
Tecticornia flabelliformis Bead Glasswort [82664]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Verticordia staminosa var. cylindracea Granite Featherflower [55823]	Endangered	Species or species habitat may occur within area	In buffer area only
REPTILE			
Egernia stokesii badia Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat may occur within area	In buffer area only
SPIDER			
Idiosoma nigrum Shield-backed Trapdoor Spider, Black Rugose Trapdoor Spider [66798]	Vulnerable	Species or species habitat known to occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla cinerea			
Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [52086]	WA	In buffer area only
Commonwealth Land - [52087]	WA	In buffer area only
Commonwealth Land - [52171]	WA	In buffer area only
Commonwealth Land - [52179]	WA	In buffer area only
Commonwealth Land - [51405]	WA	In buffer area only
Commonwealth Land - [51057]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51725]	WA	In buffer area only
Commonwealth Land - [51726]	WA	In buffer area only
Commonwealth Land - [51727]	WA	In buffer area only
Commonwealth Land - [52181]	WA	In buffer area only
Commonwealth Land - [51729]	WA	In buffer area only
Commonwealth Land - [51728]	WA	In buffer area only
Commonwealth Land - [52176]	WA	In feature area
Commonwealth Land - [51723]	WA	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chalcites osculans as Chrysococcyx osculans			
Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus			
Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea			
Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Thinornis cucullatus as Thinornis rubricollis			
Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Baladjie Lake	Nature Reserve	WA	In buffer area only
Biljahnie Rock	Nature Reserve	WA	In buffer area only
Bushfire Rock	Nature Reserve	WA	In buffer area only
Carrabin	Nature Reserve	WA	In buffer area only
Condarnin Rock	Nature Reserve	WA	In buffer area only
Duladgin	Nature Reserve	WA	In buffer area only
Frog Rock	Nature Reserve	WA	In feature area
Jilbadji	Nature Reserve	WA	In feature area
Lake Cronin	Nature Reserve	WA	In buffer area only
Lake Hurlstone	Nature Reserve	WA	In buffer area only
Marble Rocks	Nature Reserve	WA	In buffer area only
Mount Hampton	Nature Reserve	WA	In buffer area only
Neendojer Rock	Nature Reserve	WA	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
NTWA Bushland covenant (0009)	Conservation Covenant	WA	In buffer area only
NTWA Bushland covenant (0079)	Conservation Covenant	WA	In buffer area only
NTWA Bushland covenant (0093)	Conservation Covenant	WA	In buffer area only
NTWA Bushland covenant (0118)	Conservation Covenant	WA	In buffer area only
Sandford Rocks	Nature Reserve	WA	In buffer area only
Unnamed WA09927	Nature Reserve	WA	In buffer area only
Unnamed WA16000	Nature Reserve	WA	In buffer area only
Unnamed WA18583	Nature Reserve	WA	In buffer area only
Unnamed WA18584	Nature Reserve	WA	In buffer area only
Unnamed WA25801	Nature Reserve	WA	In buffer area only
Unnamed WA27146	Nature Reserve	WA	In buffer area only
Unnamed WA28047	Nature Reserve	WA	In buffer area only
Unnamed WA28323	Nature Reserve	WA	In buffer area only
Unnamed WA28562	Nature Reserve	WA	In buffer area only
Unnamed WA28940	Nature Reserve	WA	In buffer area only
Unnamed WA30430	Nature Reserve	WA	In buffer area only
Unnamed WA34197	Nature Reserve	WA	In buffer area only
Unnamed WA36918	Nature Reserve	WA	In buffer area only
Unnamed WA40460	Nature Reserve	WA	In buffer area only
Unnamed WA43219	Nature Reserve	WA	In buffer area only
Welsh	Nature Reserve	WA	In buffer area only
Wockallarry	Nature Reserve	WA	In feature area
Yellowdine	Nature Reserve	WA	In buffer area only

Nationally Important Wetlands

[Resource Information]

Wetland Name	State	Buffer Status
Lake Cronin	WA	In buffer area only

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Develop a Nickel Sulphide Open Cut Mine, Underground Mine, and Associated Infra	2008/4443	Controlled Action	Post-Approval	In buffer area only
Earl Grey Lithium Project	2017/7950	Controlled Action	Post-Approval	In feature area
Edna May Gold Project expansion - Greenfinch Pit, Westonia, WA	2018/8213	Controlled Action	Final PD	In buffer area only
Forrestania Nickel Project - Spotted Quoll-Cosmic Boy Haul Road	2011/6003	Controlled Action	Post-Approval	In buffer area only
Goldfields Water Supply Scheme Project	2019/8547	Controlled Action	Post-Approval	In feature area
Iron Ore Project	2010/5435	Controlled Action	Post-Approval	In feature area
Nava-1 Cable System	2001/510	Controlled Action	Completed	In feature area
New Morning Underground Nickel Deposit Project	2021/8971	Controlled Action	Referral Decision	In buffer area only
Parker Range Mt Caudan Iron Ore Haul Road Proposal	2021/8955	Controlled Action	Assessment Approach	In feature area
Not controlled action				
Edna May Gold Project Pit Cutback	2012/6333	Not Controlled Action	Completed	In buffer area only
Forrestania Nickel Project Flying Fox T5 and water pipeline	2006/2904	Not Controlled Action	Completed	In buffer area only
Great Eastern Highway Safety Improvements SLK 3118 to SLK 327	2020/8746	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In buffer area only
Recommencement of operations, Westonia Mine	2003/1111	Not Controlled Action	Completed	In buffer area only
Tenement M77/1245, Norseman Road, Sand Pit (North Pit), WA	2014/7167	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix 4. Declared Pests -s22(2) of the Yilgarn Local Government Area

Declared Pests - s22(2) of the Yilgarn Local Government Area (DPIRD, 2022c).

Taxon	Control categories	WoNS	Common name
**Alhagi maurorum* Medik.	C3 Management		camelthorn
**Asparagus asparagoides* (L.) Druce		Y	bridal creeper
**Austrocylindropuntia cylindrica* (Juss. ex Lam.) Backeb.	C3 Management	Y	coral cactus, cane cactus
**Austrocylindropuntia subulata* (Muehlenpf.) Backeb.	C3 Management	Y	Eve's pin, Eve's needle
**Calotropis procera* (Aiton) W.T.Aiton			rubber bush, calotropis
**Chondrilla juncea* L.	C3 Management		skeleton weed, rush skeleton weed, naked weed, hogbite, gum succory
**Cryptostegia madagascariensis* Bojer ex Decne.			Rubbervine, Madagascar rubbervine
**Cylindropuntia fulgida* (Engelm.) F.M.Knuth	C3 Management	Y	coral cactus, boxing glove cactus
**Cylindropuntia imbricata* (Haw.) F.M.Knuth	C3 Management	Y	rope pear, devil's rope
**Cylindropuntia kleiniae* (DC.) F.M.Knuth	C3 Management	Y	candle cholla, Klein's pencil cactus, Klein's cholla
**Cylindropuntia pallida* (Rose) F.M.Knuth	C3 Management	Y	white-spined Hudson pear, Hudson pear (white-spined)
**Cylindropuntia tunicata* (Lehm.) F.M.Knuth	C3 Management	Y	thistle cholla, brown-spined Hudson pear, Hudson pear (brown-spined)
**Echium plantagineum* L.			salvation Jane, Paterson's curse
**Hydrocotyle ranunculoides* L. f.	C3 Management		water pennywort, spaghetti weed, hydrocotyle, grote waternavel, floating marsh pennywort
**Jatropha gossypiifolia* L.	C3 Management	Y	cotton-leaf physic-nut, bellyache bush
**Lantana camara* L.	C3 Management	Y	wild sage, white sage, red-flowered sage, largeleaf lantana, common lantana
**Moraea flaccida* (Sweet) Steud.			one-leaf cape tulip
**Moraea miniata* Andrews			two-leaf cape tulip
**Onopordum acaulon* L.			stemless thistle
**Opuntia elata* Salm-Dyck	C3 Management	Y	Riverina pear
**Opuntia elatior* Mill.	C3 Management	Y	red-flower prickly pear

Taxon	Control categories	WoNS	Common name
**Opuntia engelmannii* Salm-Dyck ex Engelm.	C3 Management	Y	Engelmann's prickly pear, Engelmann's pear
**Opuntia ficus-indica* (L.) Mill.	C3 Management		tuna cactus, sweet pricklypear, spiny pest pear, spineless cactus, prickly pear, mission pricklypear, grootdoringturksvy, Indian fig, Boereturksvy
**Opuntia microdasys* (Lehm.) Pfeiff.	C3 Management	Y	teddy bear cactus, golden bristle cactus, bunny ears
**Opuntia monacantha* Haw.	C3 Management	Y	drooping tree pear
**Opuntia polyacantha* Haw.	C3 Management	Y	plains prickly pear
**Opuntia puberula* Hort. Vindob. ex Pfeiff.	C3 Management	Y	nopal de tortuga, nopal de culebra
**Opuntia stricta* (Haw.) Haw.	C3 Management	Y	erect prickly pear, common prickly pear
**Opuntia tomentosa* Salm-Dyck	C3 Management	Y	velvet tree pear, velvet pear
**Parkinsonia aculeata* L.	C3 Management	Y	parkinsonia
**Pistia stratiotes* L.	C2 Eradication		water lettuce
**Prosopis glandulosa* Torr. x **Prosopis velutina* Wooton	C2 Eradication, C3 Management	Y	mesquite
**Rubus anglocandicans* A.Newton	C3 Management	Y	Blackberry
**Rubus laudatus* A.Berger	C3 Management	Y	early blackberry
**Rubus rugosus* Sm.	C3 Management	Y	keriberry, Himalayan blackberry
**Rubus ulmifolius* Schott	C3 Management	Y	elmleaf blackberry, Thornfree, Loch Ness, Blacksatin
**Sagittaria platyphylla* (Engelm.) J.G.Sm.	C3 Management	Y	sagittaria, delta arrowhead
**Senna alata* (L.) Roxb.			seven-golden-candlesticks, ringwormshrub, ringwormbush, ringworm senna, empress-candle-plant, emperor's candlesticks, candlestick senna, candle bush, Christmas-candle
**Senna obtusifolia* (L.) H.S.Irwin & Barneby			sicklepod senna, sicklepod, coffeeweed, Javabean, Chinese Senna
**Silybum marianum* (L.) Gaertn.			variegated thistle, milkthistle, blessed milkthistle

Taxon	Control categories	WoNS	Common name
**Solanum elaeagnifolium* Cav.		Y	white horsenettle, silverleaf nightshade
**Solanum linnaeanum* Hepper & P.-M.L.Jaeger			apple of Sodom
**Tamarix aphylla* (L.) H.Karst.		Y	tamarisk, flowering cypress, athel tree, athel tamarisk, athel pine, athel
**Ulex europaeus* L.	C2 Eradication C3 Management	Y	gorse, furze
**Xanthium spinosum* L.	C2 Eradication C3 Management		thorny burweed, spiny cocklebur, spiny clotbur, prickly burweed, piikkisappiruoho, dagger weed, dagger cocklebur, burweed, boetebos, Bathurst burr
**Xanthium strumarium* L.	C2 Eradication C3 Management		Sheepbur, sea burdock ,rough cocklebur, kra chap, karheasappiruoho, kankerroos ,hedgehog burweed, heartleaf cocklebur, ditchbur, common cocklebur,cocklebur,clotbur,buttonbur,burweed,abrojillo,Noogoora burr, Bathurst burr
**Zantedeschia aethiopica* (L.) Spreng.			calla lily,arum lily
**Ziziphus mauritiana* Lam.	C3 Management		Saucunazi, macaniqueira, m'sau, Indian jujube, Chinese apple

Control categories as listed under the Biosecurity and Agriculture Management Regulations 2013 (DPIRD, 2022c)

Category	Description
C1	Organisms which should be excluded from part or all of Western Australia.
C2	Organisms which should be eradicated from part or all of Western Australia.
C3	Organisms that should have some form of management applied that will alleviate the harmful impact of the organism, reduce the numbers or distribution of the organism or prevent or contain the spread of the organism.
Unassigned	Unassigned: Declared pests that are recognised as having a harmful impact under certain circumstances, where their subsequent control requirements are determined by a Plan or other legislative arrangements under the Act.



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Appendix 3. Systematic Species List for Vegetation of the Study Area matching the description of Eucalypt woodlands of the WA Wheatbelt EPBC listed Threatened Ecological Community

Family	Confirmed Species Name	Cons_Status	Taxon_Status
Amaranthaceae	Ptilotus exaltatus		
Amaranthaceae	Ptilotus polystachyus		
Apocynaceae	Alyxia buxifolia		
Asparagaceae	Chamaexeros fimbriata		
Asparagaceae	Lomandra effusa		
Asparagaceae	Thysanotus sp. indet 1		INDET
Asparagaceae	Thysanotus sp. indet 2		INDET
Asparagaceae	Thysanotus sp. indet 5		INDET
Asparagaceae	Thysanotus sp. indet 6		INDET
Asteraceae	Angianthus tomentosus		
Asteraceae	Asteraceae sp. indet (daisy plumose)		INDET
Asteraceae	Asteraceae sp. indet 1		INDET
Asteraceae	Asteraceae sp. indet 3		INDET
Asteraceae	Asteraceae sp. indet 4		INDET
Asteraceae	Asteraceae sp. indet 5		INDET
Asteraceae	Centaurea melitensis		
Asteraceae	Erymophyllum ramosum subsp. ramosum		
Asteraceae	Olearia ?sp. Eremicola (Diels & Pritzel s.n. PERTH 00449628)		INDET
Asteraceae	Olearia magniflora		
Asteraceae	Olearia muelleri		
Asteraceae	Olearia sp. Eremicola (Diels & Pritzel s.n. PERTH 00449628)		
Asteraceae	Pogonolepis ?muelleriana		INDET
Asteraceae	Senecio ?glossanthus		INDET
Boraginaceae	Halgania ?andromedifolia		INDET
Boraginaceae	Halgania andromedifolia		
Brassicaceae	Brassica tournefortii	Weed	
Brassicaceae	Brassicaceae sp. indet		INDET
Casuarinaceae	Allocasuarina acutivalvis subsp. acutivalvis		
Casuarinaceae	Allocasuarina helmsii		
Casuarinaceae	Allocasuarina sp. indet		INDET
Casuarinaceae	Allocasuarina sp. indet (fine leaf)		INDET

Family	Confirmed Species Name	Cons_Status	Taxon_Status
Chenopodiaceae	Atriplex ?bunburyana		INDET
Chenopodiaceae	Atriplex ?vesicaria		INDET
Chenopodiaceae	Atriplex acutibractea subsp. karoniensis		
Chenopodiaceae	Atriplex bunburyana/vesicaria		INDET
Chenopodiaceae	Atriplex sp. indet		
Chenopodiaceae	Atriplex vesicaria		
Chenopodiaceae	Chenopodiaceae sp. indet		INDET
Chenopodiaceae	Maireana sp. indet		INDET
Chenopodiaceae	Maireana trichoptera		
Chenopodiaceae	Rhagodia sp. Watheroo (R.J. Cranfield & P.J. Spencer 8183)		
Chenopodiaceae	Sclerolaena ?diacantha		INDET
Chenopodiaceae	Sclerolaena diacantha		
Chenopodiaceae	Sclerolaena drummondii		
Chenopodiaceae	Sclerolaena sp. indet		INDET
Chenopodiaceae	Tecticornia disarticulata		
Chenopodiaceae	Tecticornia sp. indet		INDET
Convolvulaceae	Wilsonia humilis		
Cupressaceae	Callitris verrucosa		
Cyperaceae	Lepidosperma sanguinolentum		
Euphorbiaceae	Beyeria sulcata subsp. brevipes		
Fabaceae	Acacia ?acuminata		INDET
Fabaceae	Acacia acuminata		
Fabaceae	Acacia asepala	Priority 2	
Fabaceae	Acacia assimilis		Indet subsp.
Fabaceae	Acacia camptoclada		
Fabaceae	Acacia colletioides		
Fabaceae	Acacia deficiens		
Fabaceae	Acacia erinacea		
Fabaceae	Acacia hemiteles		
Fabaceae	Acacia merrallii		
Fabaceae	Acacia nyssophylla		
Fabaceae	Acacia sp. indet (red midvein)		INDET
Fabaceae	Daviesia argillacea		
Fabaceae	Daviesia sp. indet		INDET

Family	Confirmed Species Name	Cons_Status	Taxon_Status
Fabaceae	Eutaxia lasiocalyx		
Fabaceae	Senna artemisioides		Indet subsp.
Fabaceae	Senna artemisioides subsp. filifolia		
Fabaceae	Senna cardiosperma		
Fabaceae	Templetonia ceracea		
Fabaceae	Templetonia sulcata		
Goodeniaceae	?Goodeniaceae sp.		INDET
Goodeniaceae	Scaevola spinescens		
Hemerocallidaceae	Dianella revoluta var. divaricata		
Lamiaceae	Westringia cephalantha var. cephalantha		
Lamiaceae	Westringia rigida		
Loranthaceae	Amyema miquelii		
Loranthaceae	Amyema sp. indet		INDET
Myrtaceae	Eucalyptus ?flocktoniae subsp. flocktoniae or urna		INDET
Myrtaceae	Eucalyptus aequioperta		
Myrtaceae	Eucalyptus aff. cylindrocarpa		INDET
Myrtaceae	Eucalyptus aff. salubris glaucous branchlet form (WB40196)	sp. nov. SOI	
Myrtaceae	Eucalyptus calycogona subsp miraculum	Priority 1	
Myrtaceae	Eucalyptus calycogona subsp. calycogona		
Myrtaceae	Eucalyptus capillosa		
Myrtaceae	Eucalyptus cylindrocarpa		
Myrtaceae	Eucalyptus gracilis		
Myrtaceae	Eucalyptus longicornis		
Myrtaceae	Eucalyptus oleosa subsp. oleosa		
Myrtaceae	Eucalyptus phenax subsp. phenax		
Myrtaceae	Eucalyptus polita subsp. ocreta	Priority 3	
Myrtaceae	Eucalyptus protensa		
Myrtaceae	Eucalyptus salmonophloia		
Myrtaceae	Eucalyptus urna subsp. xesta (syn. E. sp. Dunbar Road (D. Nicolle & M. French DN 5466	Priority 1	
Myrtaceae	Eucalyptus sp. indet (fine leaf)		INDET

Family	Confirmed Species Name	Cons_Status	Taxon_Status
Myrtaceae	Eucalyptus sp. indet (mallee, glossy pale green leaves)		INDET
Myrtaceae	Eucalyptus sp. indet (rough stocking to 2-3 m)		INDET
Myrtaceae	Eucalyptus sp. indet (thick dark satin green leaves)		INDET
Myrtaceae	Eucalyptus sp. indet (wide dull blue green leaves, red margin and stems)		INDET
Myrtaceae	Eucalyptus sp. indet 1		INDET
Myrtaceae	Eucalyptus tephroclada		
Myrtaceae	Melaleuca acuminata subsp. acuminata		
Myrtaceae	Melaleuca lanceolata		
Myrtaceae	Melaleuca lateriflora		
Myrtaceae	Melaleuca pauperiflora		Indet subsp.
Myrtaceae	Melaleuca pauperiflora subsp. fastigiata		
Myrtaceae	Melaleuca scalena		
Myrtaceae	Melaleuca sheathiana		
Myrtaceae	Melaleuca sp. indet (fine leaf lime green)		INDET
Myrtaceae	Melaleuca sp. indet 1		INDET
Plantaginaceae	Plantago hispida		
Poaceae	?Eriachne sp. indet		INDET
Poaceae	Amphipogon caricinus var. caricinus		
Poaceae	Austrostipa ?pychnostachya		INDET
Poaceae	Austrostipa drummondii		
Poaceae	Austrostipa elegantissima		
Poaceae	Austrostipa hemipogon		
Poaceae	Austrostipa platychaeta		
Poaceae	Austrostipa sp. indet 1		INDET
Poaceae	Austrostipa sp. indet 2		INDET
Poaceae	Austrostipa sp. indet 3		INDET
Poaceae	Austrostipa sp. indet 5		INDET
Poaceae	Austrostipa sp. indet 6		INDET
Poaceae	Pentameris airoides subsp. airoides	Weed	

Family	Confirmed Species Name	Cons_Status	Taxon_Status
Poaceae	Poaceae sp. indet (large open panicle)		INDET
Poaceae	Poaceae sp. indet 1		INDET
Poaceae	Poaceae sp. indet 2		INDET
Poaceae	Poaceae sp. indet 3		INDET
Poaceae	Rytidosperma setaceum		
Poaceae	Rytidosperma sp. indet 1		INDET
Poaceae	Rytidosperma sp. indet 3		INDET
Proteaceae	Grevillea ?beardiana	Range Extension	INDET
Proteaceae	*Grevillea* aff. *huegelii* Marvel Loch form (P.M. Olde 91/44) NSW782779	sp. nov. SOI	
Proteaceae	Grevillea comosa ms (P.M. Olde 91/14, 7 Sep 1991)	sp. nov. SOI	
Proteaceae	Grevillea huegelii		
Proteaceae	Grevillea lissopleura	Priority 1	
Rhamnaceae	Stenanthemum aff. bremerense (WB40845) (S. bremerense in P4)	? sp. nov. SOI / P4	INDET
Rutaceae	Microcybe multiflora		Indet subsp.
Rutaceae	Microcybe multiflora subsp. multiflora		
Rutaceae	Phebalium ?brachycalyx		INDET
Rutaceae	Phebalium lepidotum		
Rutaceae	Phebalium sp. indet (long leaf)		INDET
Rutaceae	Phebalium tuberculosum		
Santalaceae	Exocarpos aphyllus		
Santalaceae	Exocarpos capnodioides		
Santalaceae	Exocarpos sparteus		
Santalaceae	Santalum acuminatum		
Sapindaceae	Dodonaea stenozyga		
Scrophulariaceae	Eremophila caerulea subsp. merrallii	Priority 4	
Scrophulariaceae	Eremophila decipiens		
Scrophulariaceae	Eremophila decipiens subsp. decipiens		
Scrophulariaceae	Eremophila drummondii		
Scrophulariaceae	Eremophila ionantha		

Family	Confirmed Species Name	Cons_Status	Taxon_Status
Scrophulariaceae	Eremophila metallicorum		
Scrophulariaceae	Eremophila oppositifolia subsp. angustifolia		
Scrophulariaceae	Eremophila saligna		
Scrophulariaceae	Eremophila scoparia		
Solanaceae	Lycium australe		
Zygophyllaceae	Roepera ?glauca		INDET
Zygophyllaceae	Roepera glauca		
Zygophyllaceae	Roepera sp. indet 1		INDET
Zygophyllaceae	Roepera sp. indet 2		INDET
Zygophyllaceae	Roepera sp. indet 3		INDET
Zygophyllaceae	Roepera sp. indet 4		INDET
Zygophyllaceae	Roepera sp. indet 5		INDET

Appendix 4. Conservation Codes for Western Australian Flora and Fauna

Conservation Codes for Western Australian Flora and Fauna

Specially protected fauna or flora are species* which have been adequately searched for and are deemed to be, in the wild, either rare, at risk of extinction, or otherwise in need of special protection, and have been gazetted as such. Conservation codes have been transitioned under regulations 170, 171 and 172 of the *Biodiversity Conservation Regulations 2018.*

T Threatened species – Schedules 1-4

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

- **Threatened fauna** is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.
- **Threatened flora** is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be "*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN Endangered species

Threatened species considered to be "*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU Vulnerable species

Threatened species considered to be "*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife*

Conservation (Specially Protected Fauna) Notice 2018 for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

EX Presumed extinct species

Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

Species that "*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018.*

CD Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P Priority species

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

Priority 1: Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

Priority 2: Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

Priority 3: Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

Priority 4: Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

*Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies or variety, or a distinct population).

Western Australian Ecological Communities

<u>Threatened Ecological Communities</u>

The BC Act provides for the statutory listing of threatened ecological communities (TECs) by the Minister.

Presumed Totally Destroyed (PD)

An ecological community that has been adequately searched for but for which no representative occurrences have been located. The community has been found to be totally destroyed or so extensively modified throughout its range that no occurrence of it is likely to recover its species composition and/or structure in the foreseeable future.

Critically Endangered (CR)

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or that was originally of limited distribution and is facing severe modification or destruction throughout its range in the immediate future, or is already severely degraded throughout its range but capable of being substantially restored or rehabilitated.

Endangered (EN)

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or was originally of limited distribution and is in danger of significant modification throughout its range or severe modification or destruction over most of its range in the near future.

Vulnerable (VU)

An ecological community that has been adequately surveyed and is found to be declining and/or has declined in distribution and/or condition and whose ultimate security has not yet been assured and/or a community that is still widespread but is believed likely to move into a category of higher threat in the near future if threatening processes continue or begin operating throughout its range.

Priority Ecological Communities

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the Priority Ecological Community List under priorities 1, 2 and 3. These three categories are ranked in order of priority for survey and/or definition of the community. Ecological communities that are adequately known, and are rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

Priority One: Poorly-known ecological communities

Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤5 occurrences or a total area of ≤ 100ha).

Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.

Priority Two: Poorly-known ecological communities

Communities that are known from few occurrences with a restricted distribution (generally ≤10 occurrences or a total area of ≤200ha). At least some occurrences are not believed to be under immediate threat (within approximately 10 years) of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.

Priority Three: Poorly known ecological communities

(i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:

(ii) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat (within approximately 10 years), or;

(iii) munities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, inappropriate fire regimes, clearing, hydrological change etc.

Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.

Priority Four: Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.

(i) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands.

(ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for a higher threat category.

(iii) Ecological communities that have been removed from the list of threatened communities during the past five years.

Priority Five: Conservation Dependent ecological communities

Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Commonwealth of Australia Conservation Codes

Threatened Flora and Fauna

Threatened fauna and flora may be listed under Section 178 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in any one of the following six categories:

Extinct

A native species is eligible to be included in the extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.

Extinct in the wild

A native species is eligible to be included in the extinct in the wild category at a particular time if, at that time:

a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
b) it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

Critically endangered

A taxon is Critically Endangered when the best available evidence indicates that it meets any of the five criteria for the category identified in Part 7.01 of the EPBC Regulations, and it is therefore considered to be facing an extremely high risk of extinction in the wild.

Endangered

A taxon is Endangered when the best available evidence indicates that it meets any of the five criteria for the category identified in Part 7.01 of the EPBC Regulations, and it is therefore considered to be facing a very high risk of extinction in the wild.

Vulnerable

A taxon is Vulnerable when the best available evidence indicates that it meets any of the five criteria for the category identified in Part 7.01 of the EPBC Regulations, and it is therefore considered to be facing a high risk of extinction in the wild.

Conservation dependent

A native species is eligible to be included in the conservation dependent category at a particular time if, at that time:

a) the species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or
b) the following subparagraphs are satisfied:
    i. the species is a species of fish;

ii. the species is the focus of a plan of management that provides for management actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long term survival in nature are maximised;
iii. the plan of management is in force under a law of the Commonwealth or of a State or Territory;
iv. cessation of the plan of management would adversely affect the conservation status of the species.

The EPBC Act does not provide for listing in a data deficient category. Where sufficient data (evidence) is unavailable to allow assessment by the Threatened Species Scientific Committee against the criteria for listing, the species are found to be ineligible. A recommendation is made to the Minister to not include the species in any category under the EPBC Act. For reasons of transparency and to inform future research, the Threatened Species Scientific Committee publishes the names of those species found to be data deficient. As data deficient is not a listing category under the EPBC Act, this has no statutory implications and the species is not considered to be listed under the EPBC Act.

Threatened Ecological Communities

Threatened Ecological communities under the EPBC Act are listed in three categories.

Critically endangered

If, at that time, an ecological community is facing an extremely high risk of extinction in the wild in the immediate future (indicative timeframe being the next 10 years).

Endangered

If, at that time, an ecological community is not critically endangered but is facing a very high risk of extinction in the wild in the near future (indicative timeframe being the next 20 years).

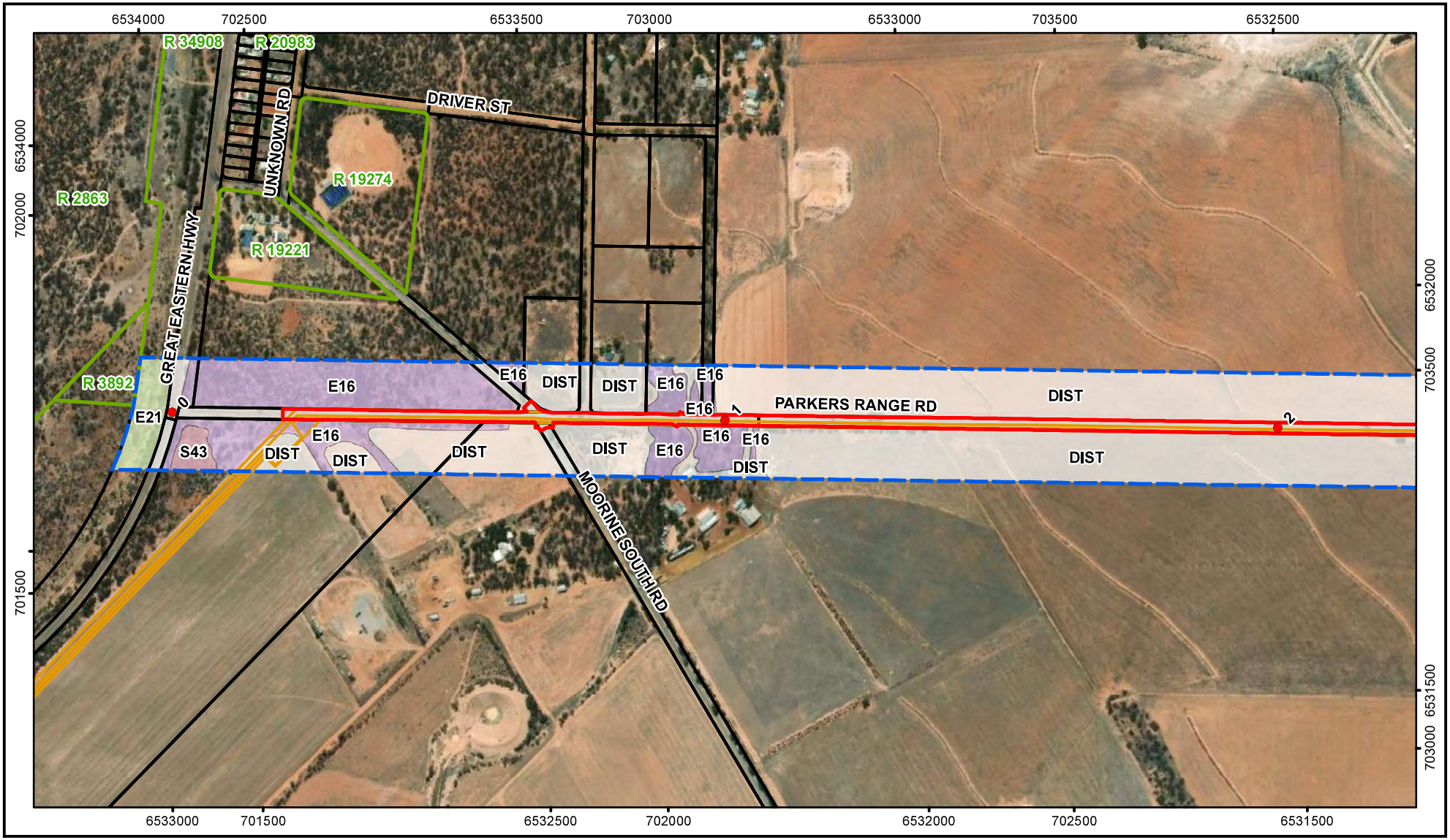
Vulnerable

If, at that time, an ecological community is not critically endangered or endangered, but is facing a high risk of extinction in the wild in the medium–term future (indicative timeframe being the next 50 years).

Appendix 5. Vegetation Maps of the Study Area

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 0 km to 2 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

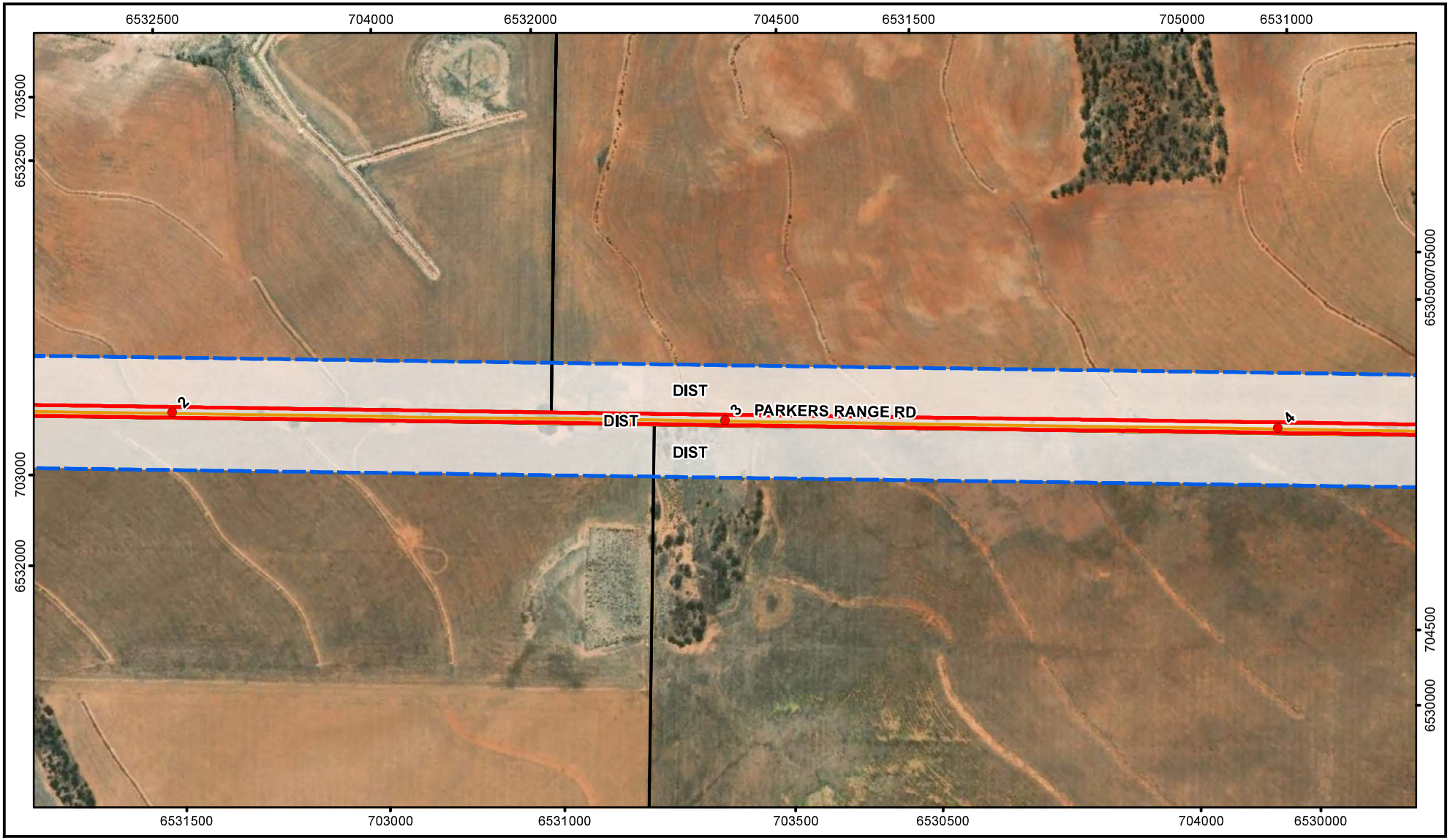
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadastral Reserves
- Cadasta Bdry

Veg Code
- E16
- S43
- DIST
- E21

0 0.2 km

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 2 km to 4 km - Vegetation

DRAFT



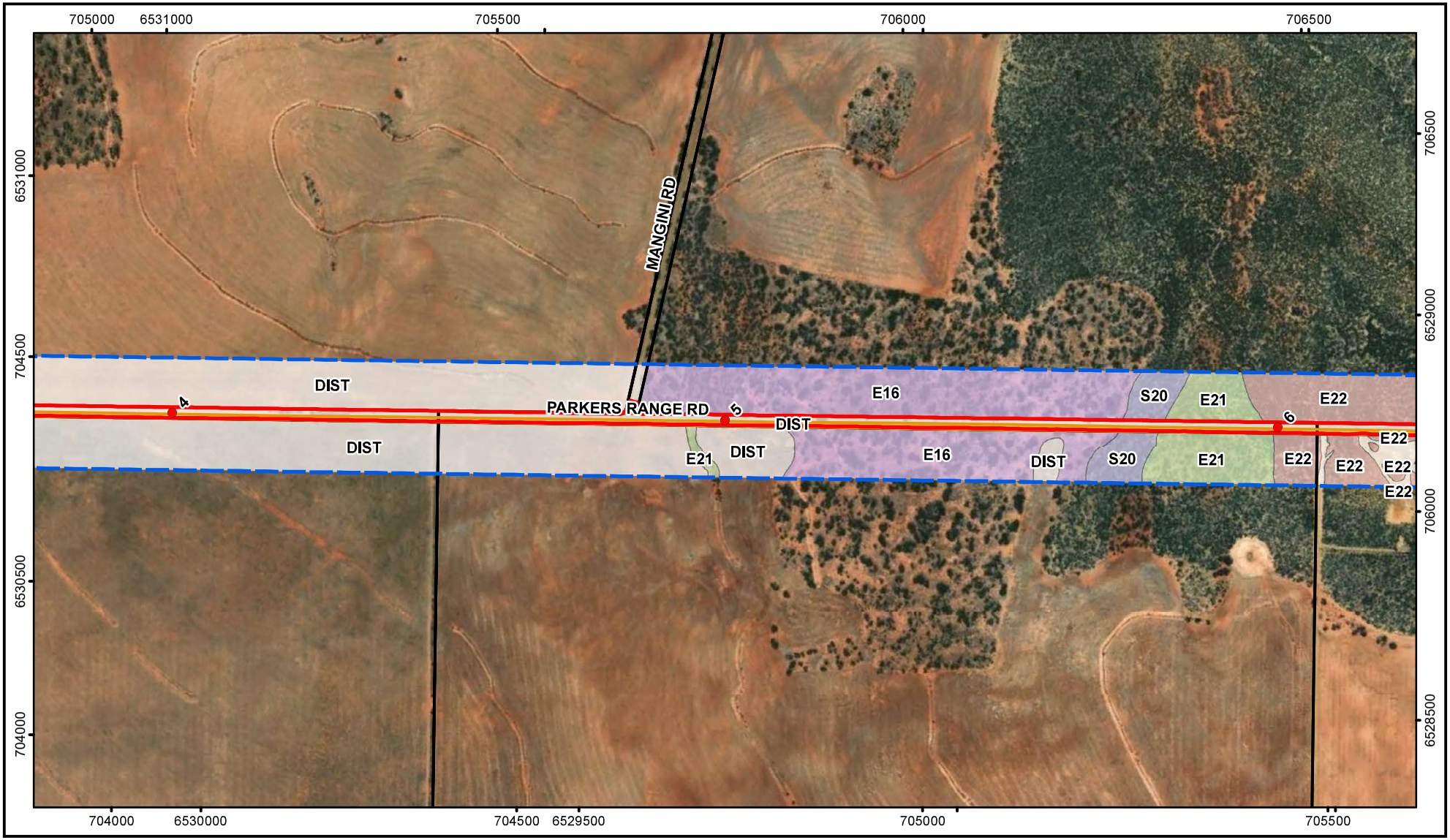
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Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
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Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry
- *Veg Code* DIST

0 0.2 km

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 4 km to 6 km - Vegetation

DRAFT



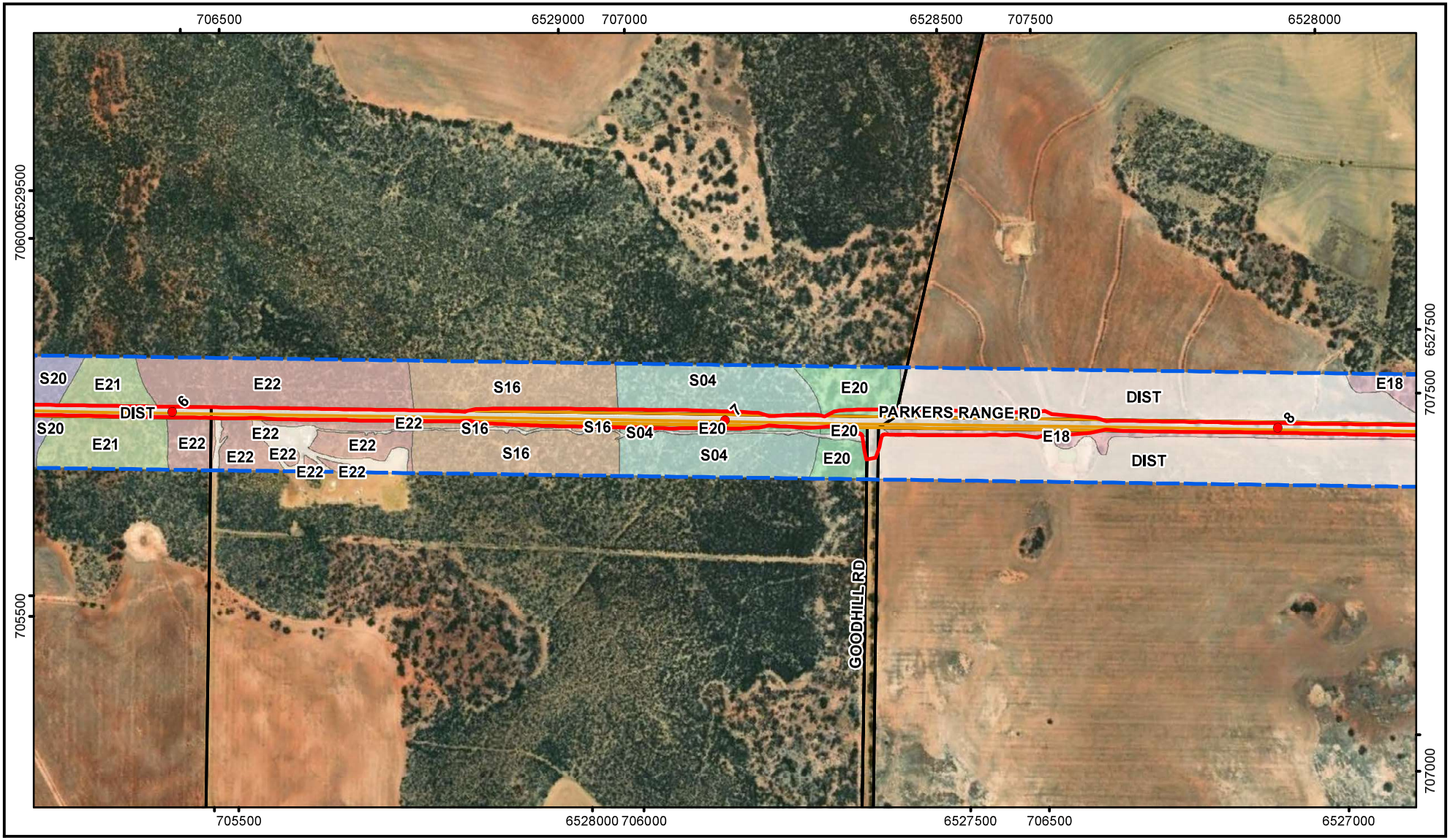
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Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry
- *Veg Code*
- DIST
- E16
- E21
- E22
- S20

0 0.2 km

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 6 km to 8 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
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Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

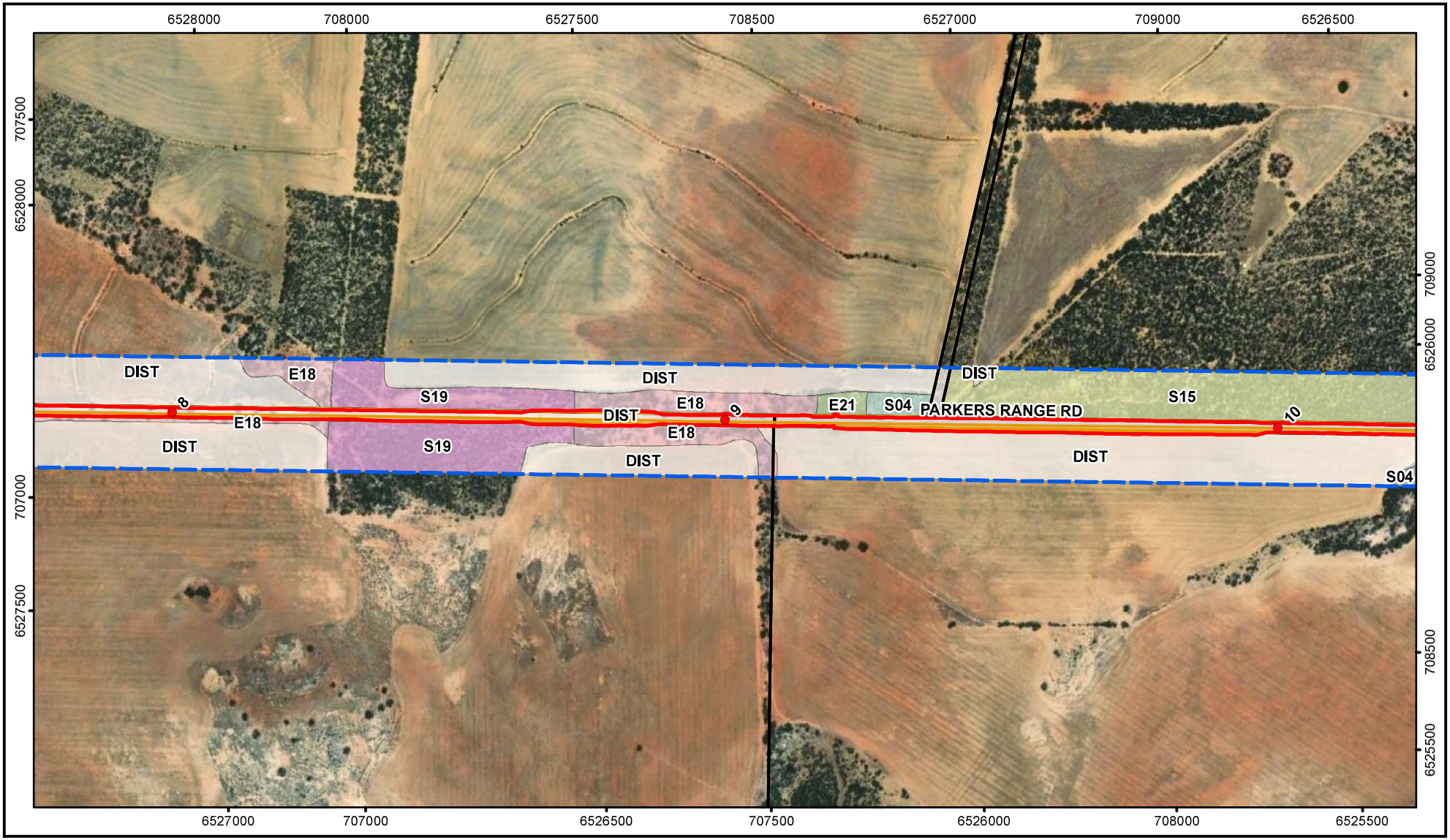
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

Veg Code
- DIST
- E16
- E18
- E20
- E21
- E22
- S04
- S16
- S20

0 0.2 km

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 8 km to 10 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
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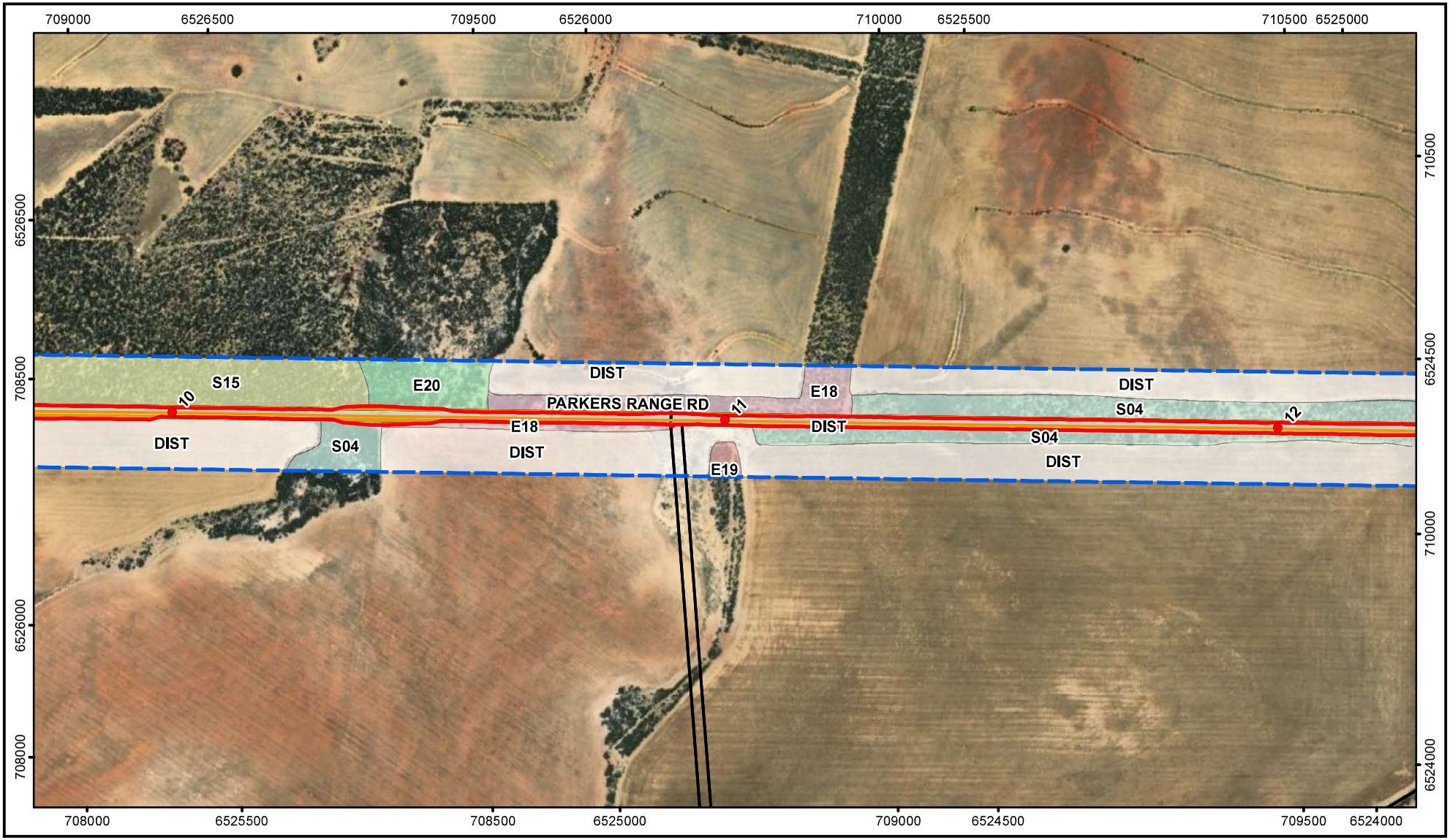
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry
- *Veg Code*
- DIST
- E18
- E21
- S04
- S15
- S19

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 10 km to 12 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
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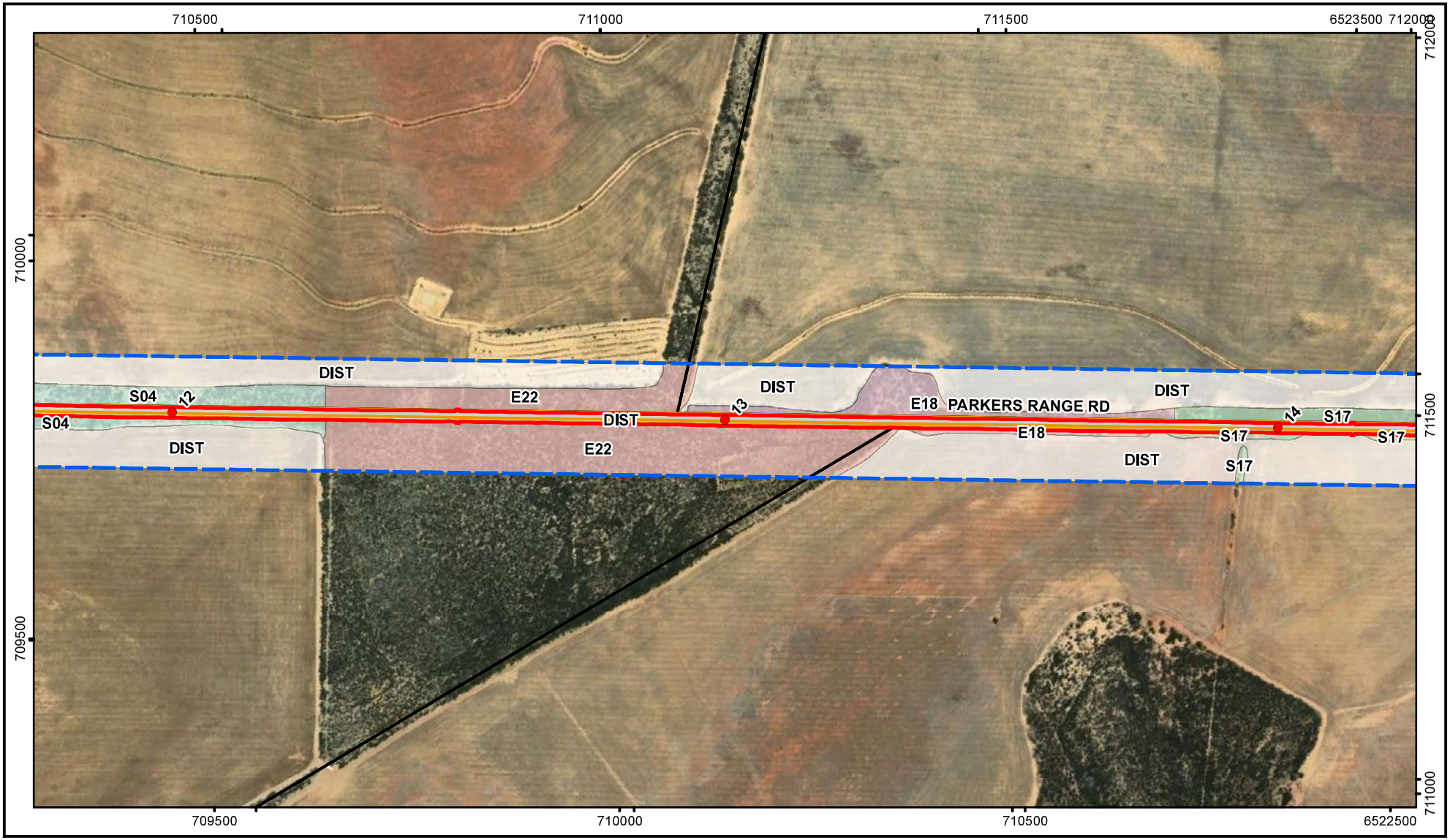
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry
- *Veg Code*
- DIST
- E18
- E19
- E20
- S04
- S15

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 12 km to 14 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
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Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry
- *Veg Code*
- DIST
- E18
- E22
- S04
- S17

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 14 km to 16 km - Vegetation

DRAFT



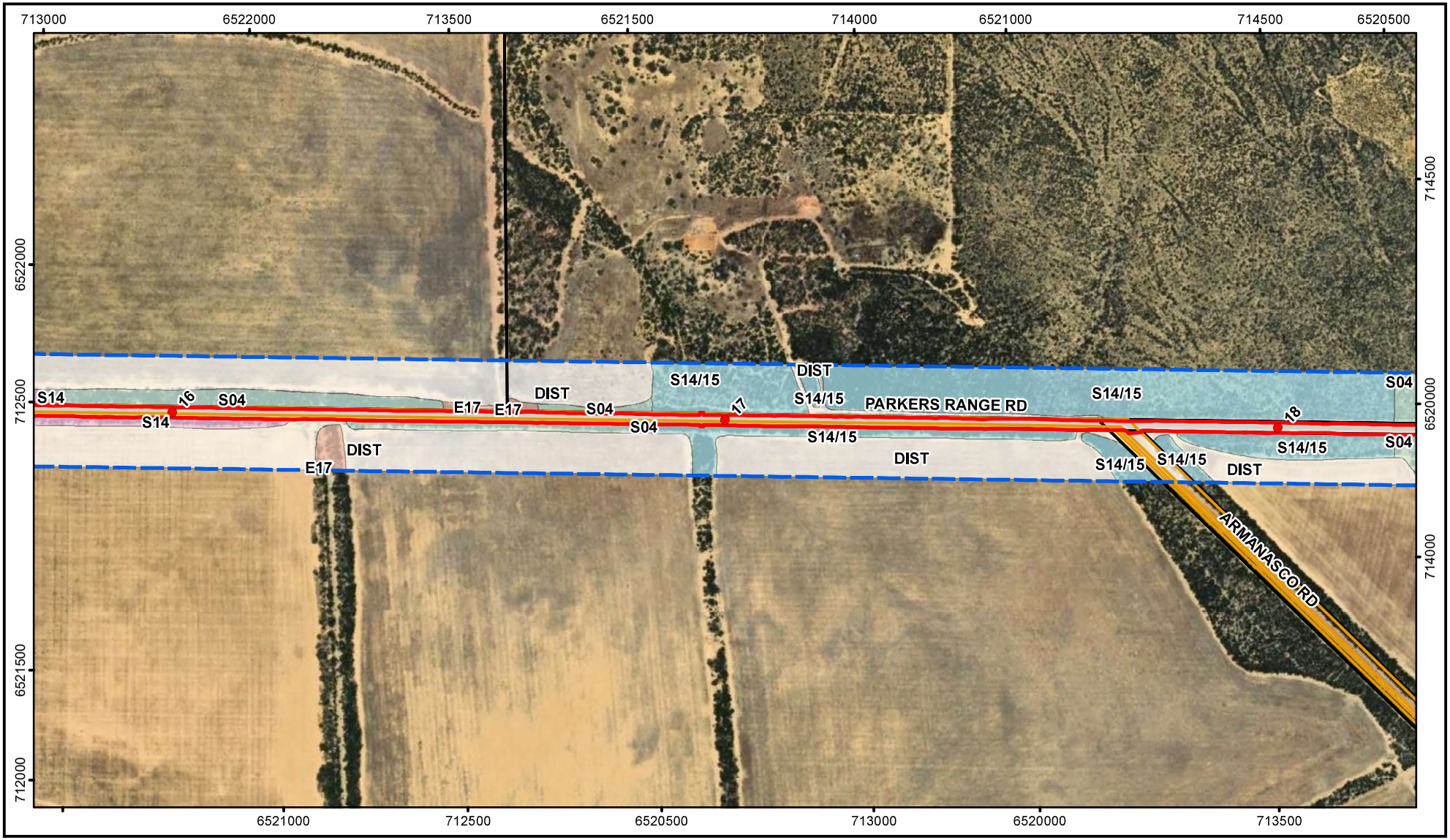
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For detailed legend refer to report

Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry
- *Veg Code*
- DIST
- E18
- E19
- S04
- S14
- S16
- S17

0 0.2 km

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 16 km to 18 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
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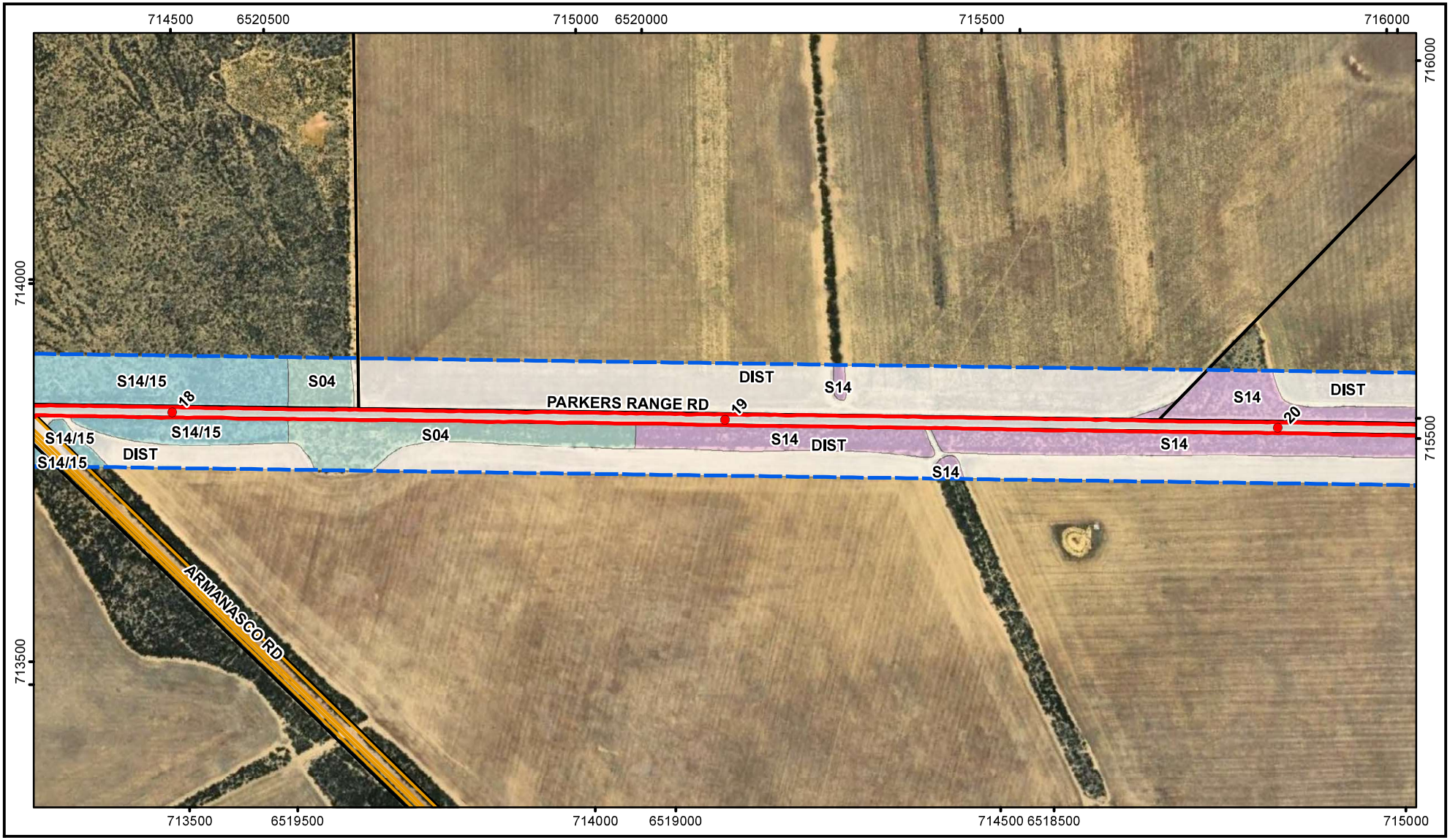
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- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry
- *Veg Code*
- E17
- DIST
- S14
- S04
- S14/15

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 18 km to 20 km - Vegetation

DRAFT



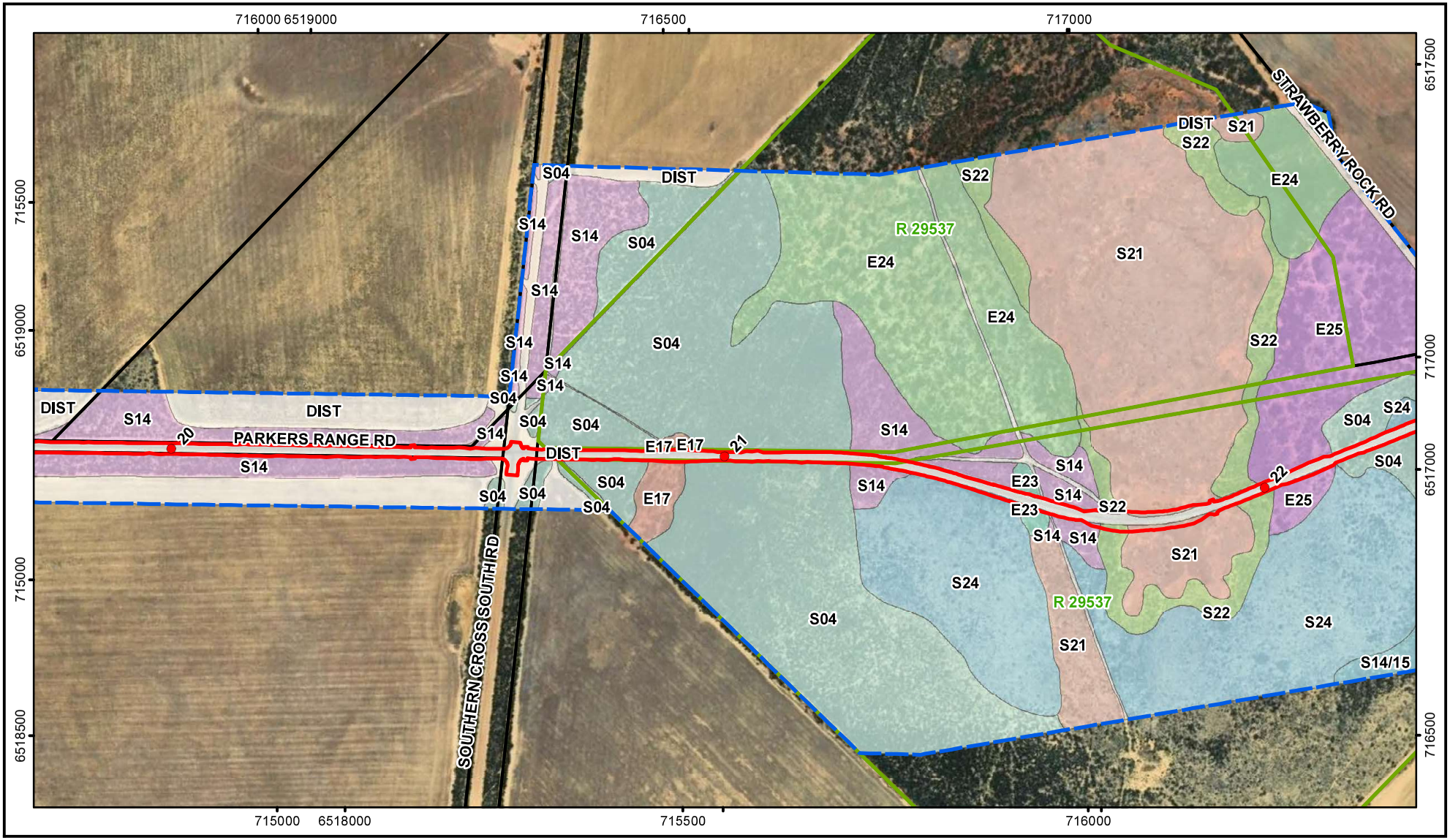
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For detailed legend refer to report

Legend
Centreline Chainage
CPS 10197/1
Survey Limit
MS1118
Cadasta Bdry
Veg Code
S04
S14/15
DIST
S14

0 0.2 km
N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 20 km to 22 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
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For detailed legend refer to report

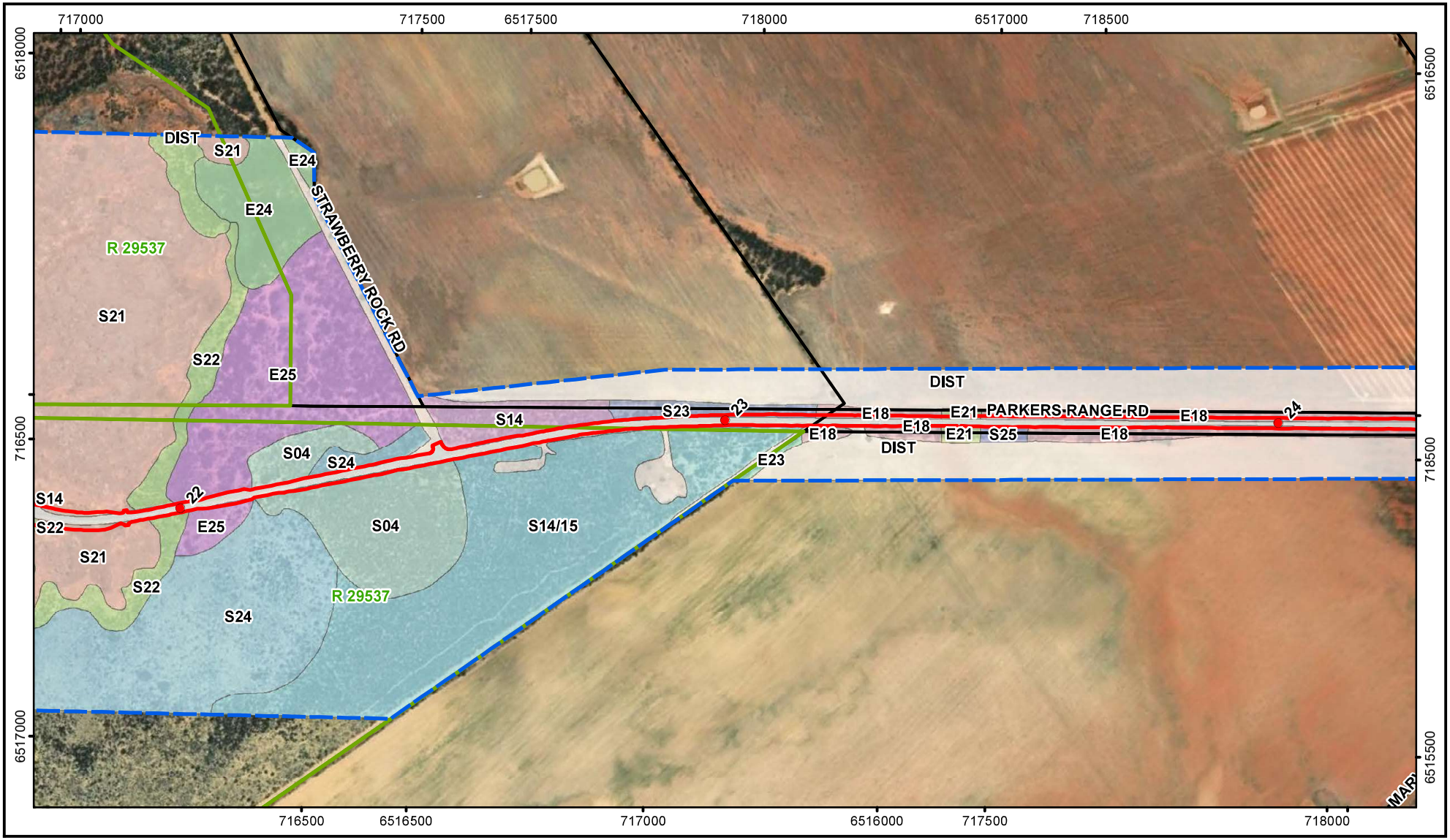
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg Code
DIST, E17, E23, E24, E25, S04, S14, S21, S22, S24, S14/15

0 0.2 km

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 22 km to 24 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
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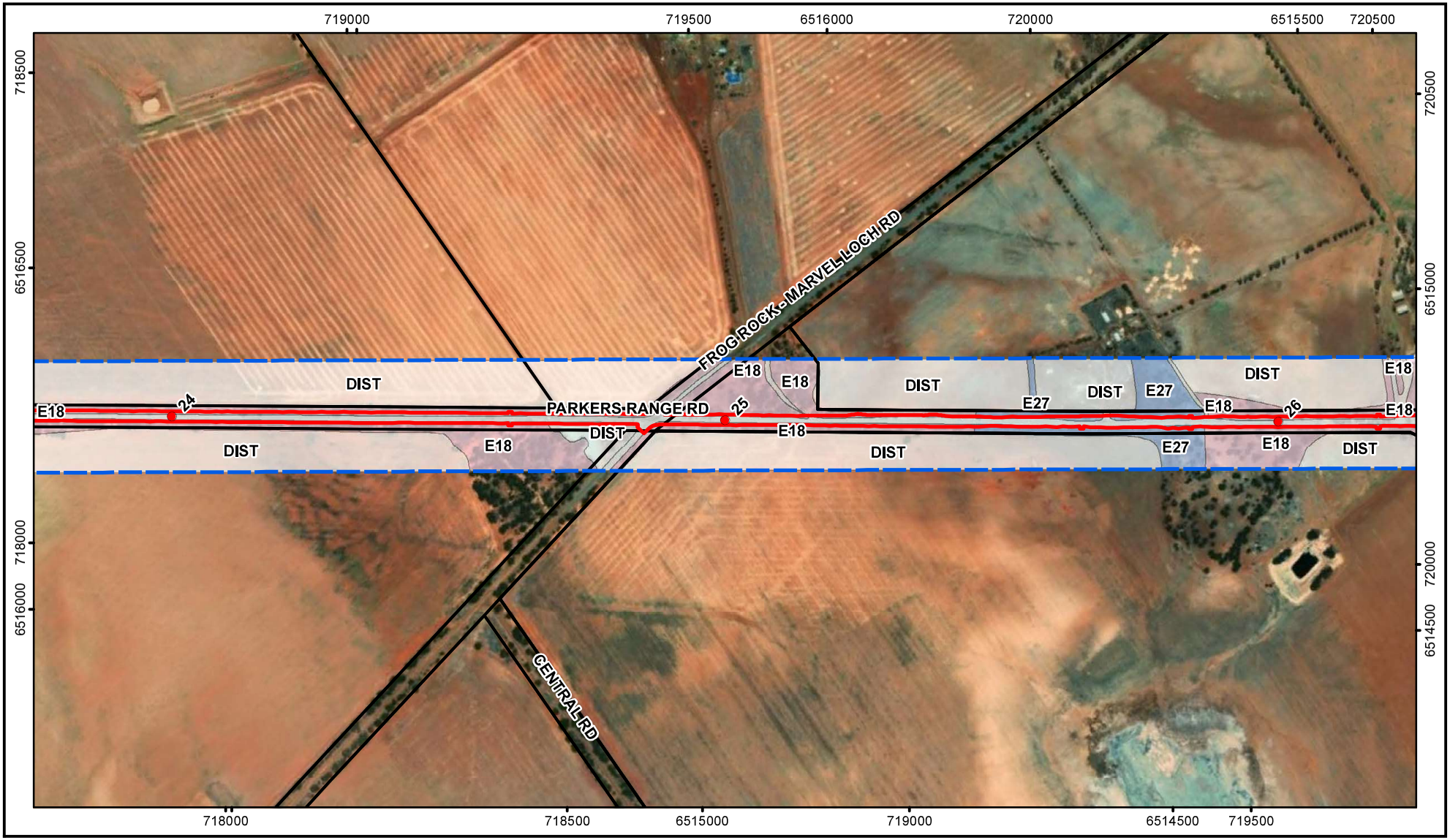
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg Code
DIST, E18, E21, E23, E24, E25, S04, S14, S14/15, S21, S22, S23, S24, S25

0 0.2 km
N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 24 km to 26 km - Vegetation

DRAFT



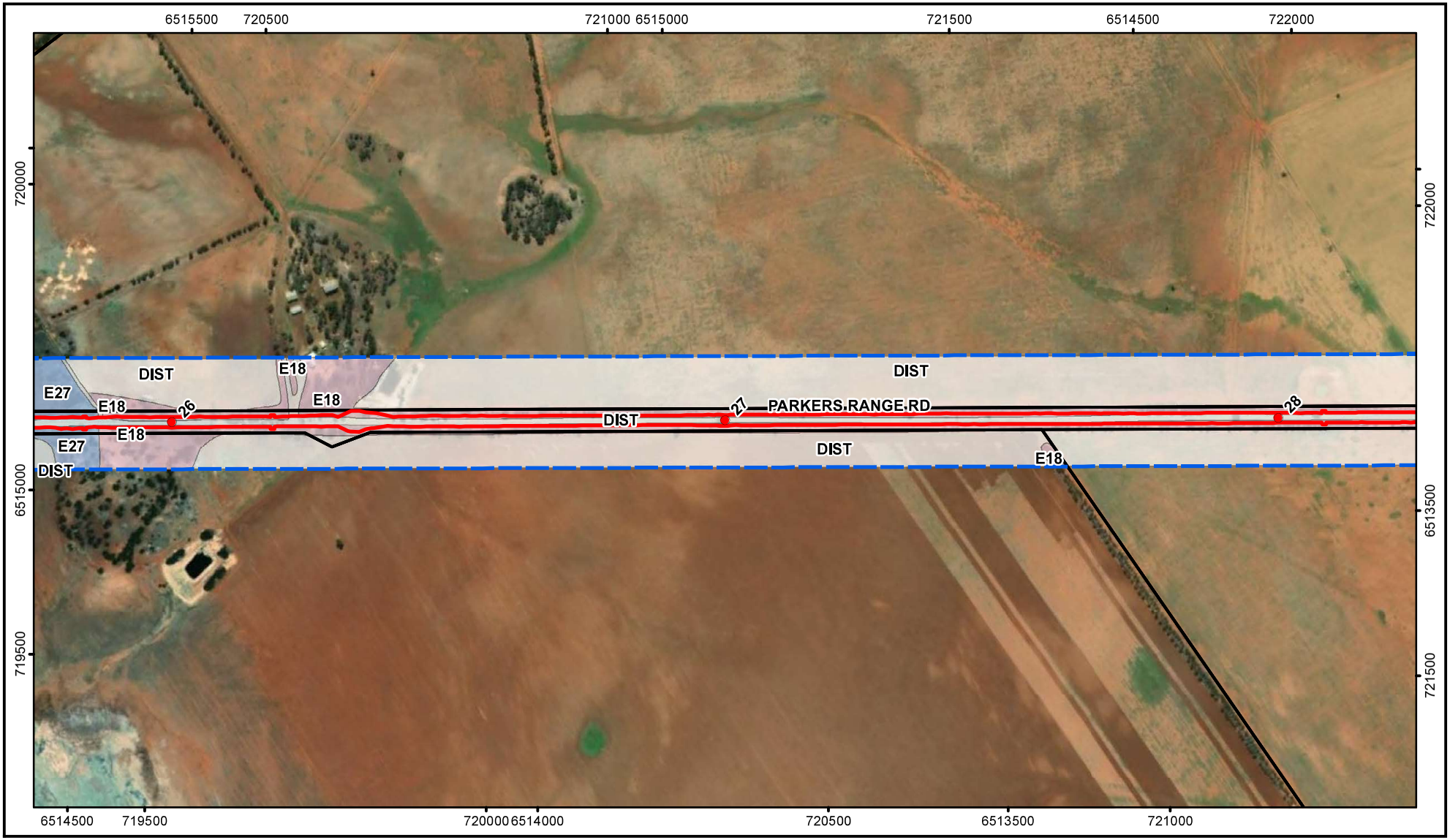
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Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

Legend
Centreline Chainage
Survey Limit
Veg Code
DIST
E18
CPS 10197/1
Cadasta Bdry
E27

0 0.2 km
N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 26 km to 28 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

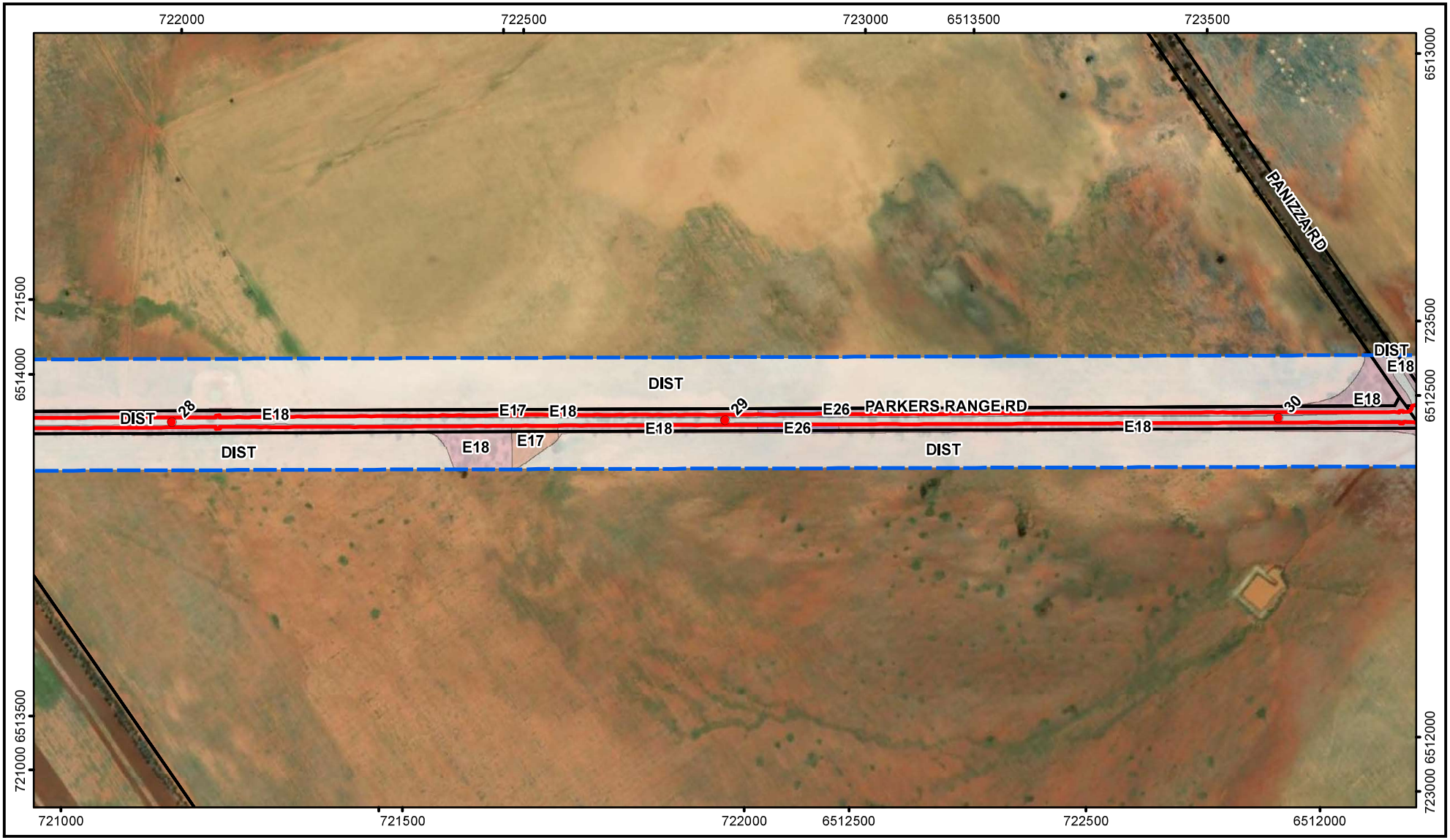
Legend
- Centreline Chainage
- Survey Limit
- *Veg Code*
- DIST
- E18
- CPS 10197/1
- Cadasta Bdry
- E27

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 28 km to 30 km - Vegetation

DRAFT



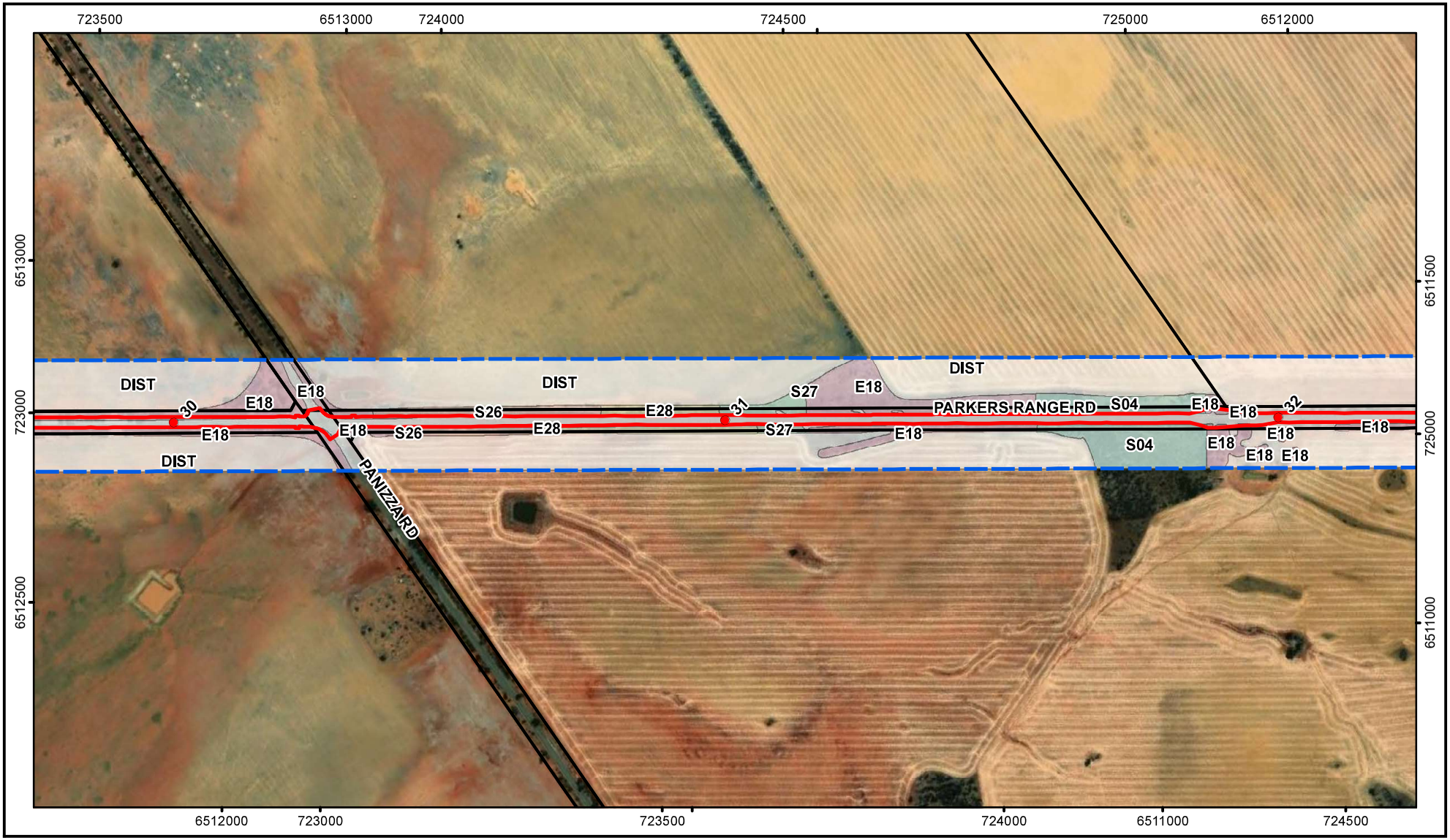
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Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

Legend
Centreline Chainage
CPS 10197/1
Survey Limit
Cadasta Bdry
Veg Code
DIST
E17
E18
E26

0 0.2 km
N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 30 km to 32 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

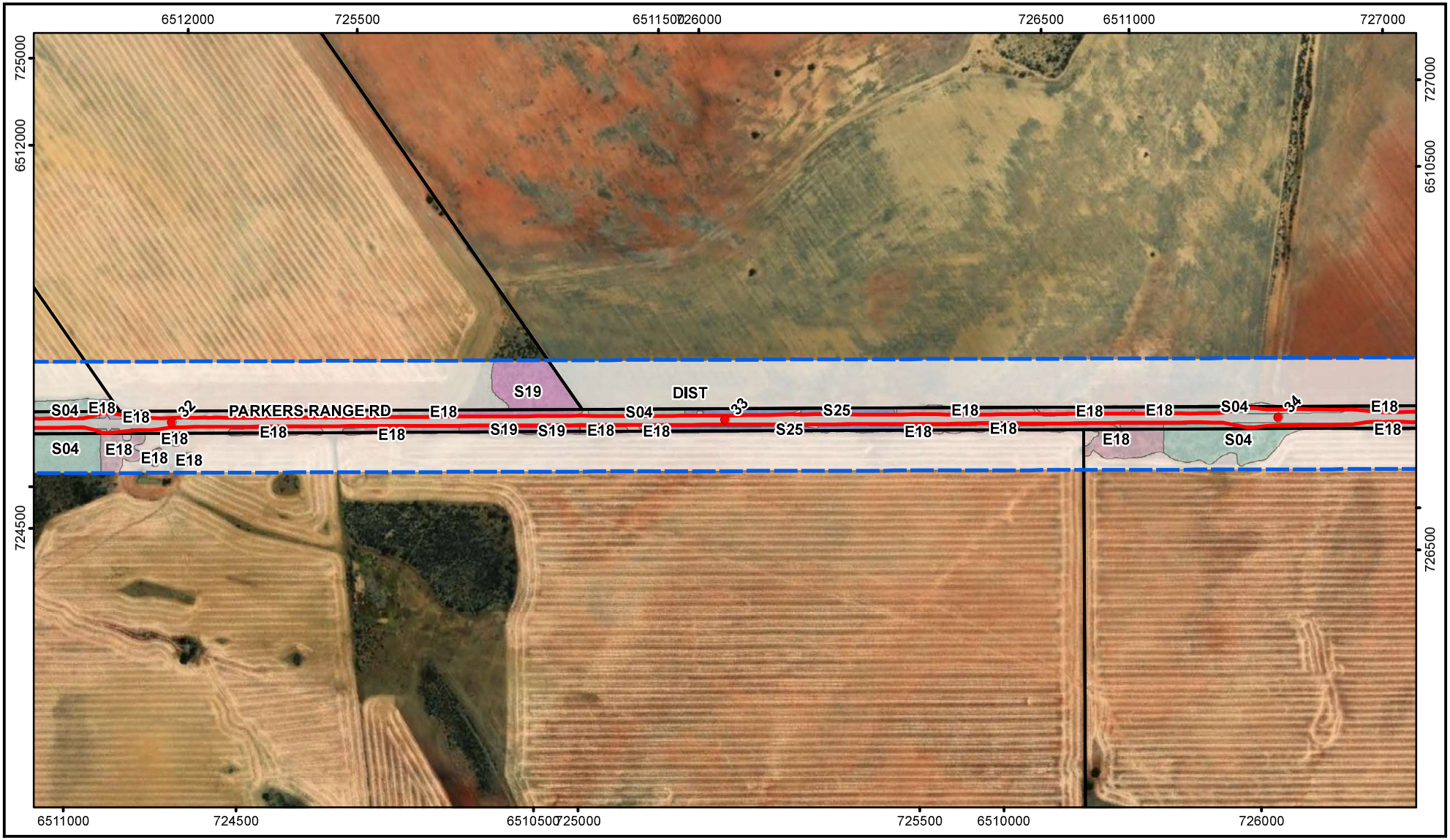
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry
- *Veg Code*
- DIST
- E18
- E28
- S04
- S26
- S27

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 32 km to 34 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

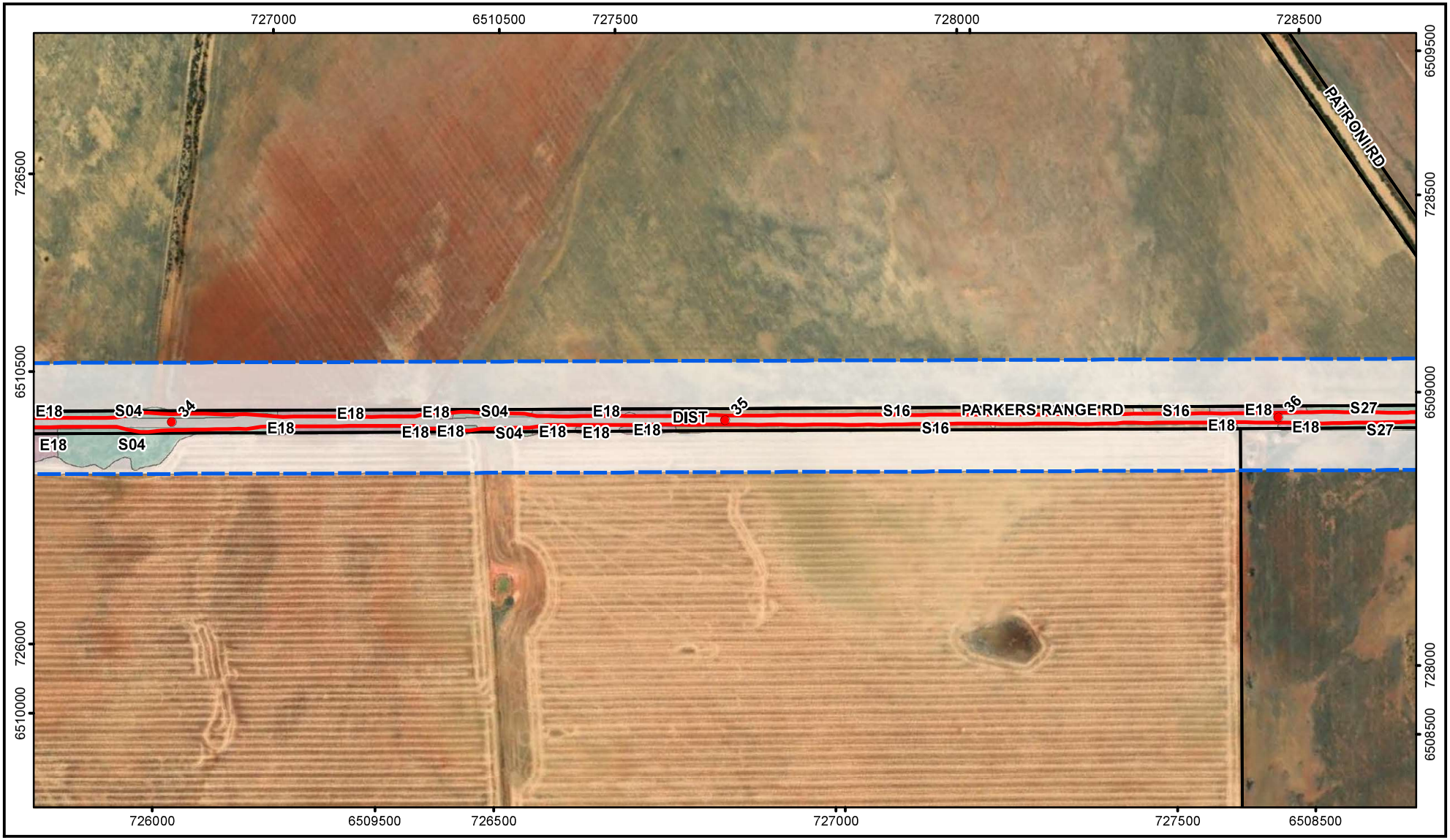
Legend
Centreline Chainage
CPS 10197/1
Survey Limit
Cadasta Bdry
Veg Code
DIST
E18
S04
S19
S25

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 34 km to 36 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

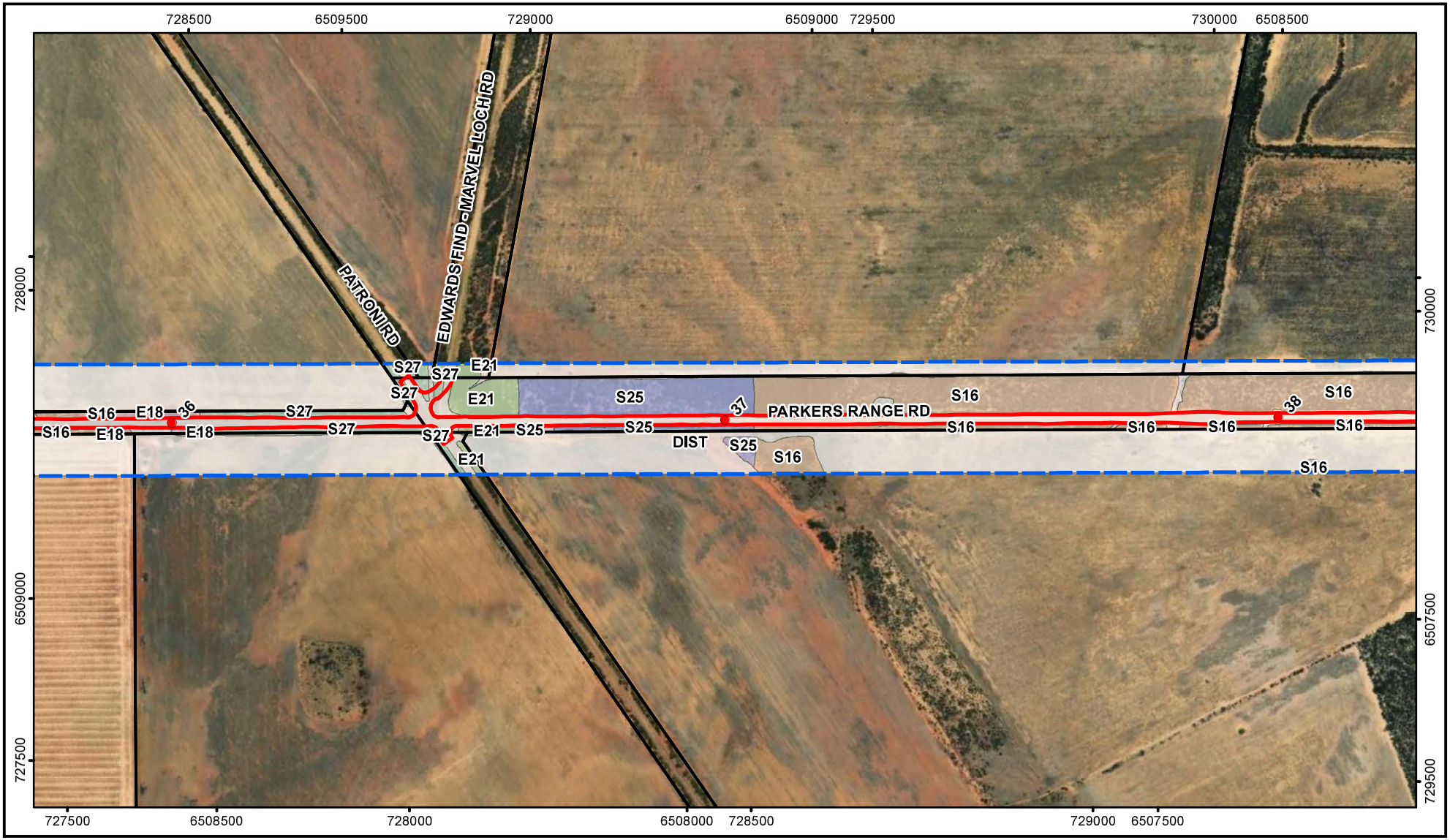
Legend
- Centreline Chainage
- Survey Limit
- *Veg Code*
- E18
- S16
- CPS 10197/1
- Cadasta Bdry
- DIST
- S04
- S27

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 36 km to 38 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

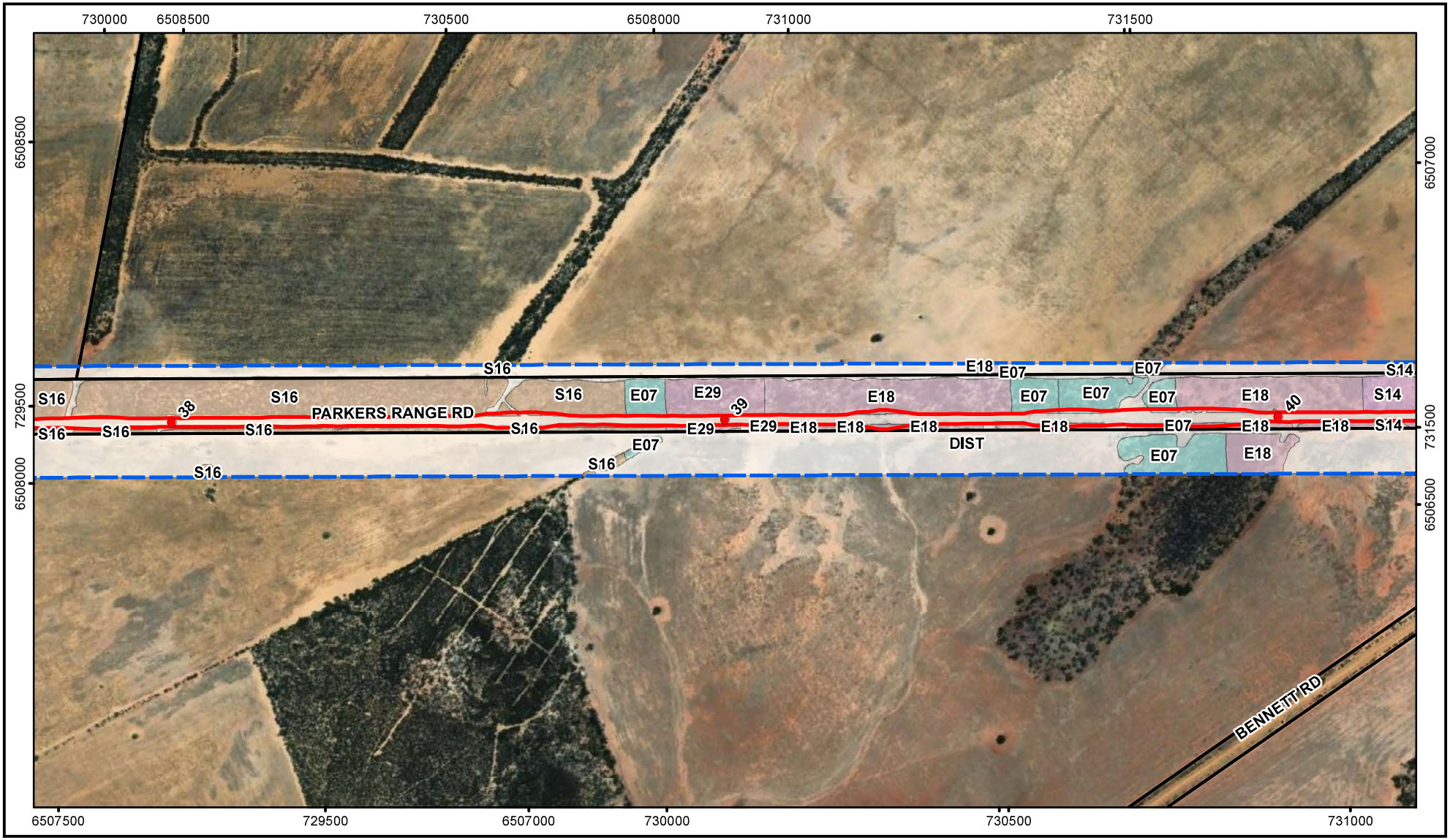
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry
- *Veg Code*
- DIST
- E18
- E21
- S16
- S25
- S27

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 38 km to 40 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

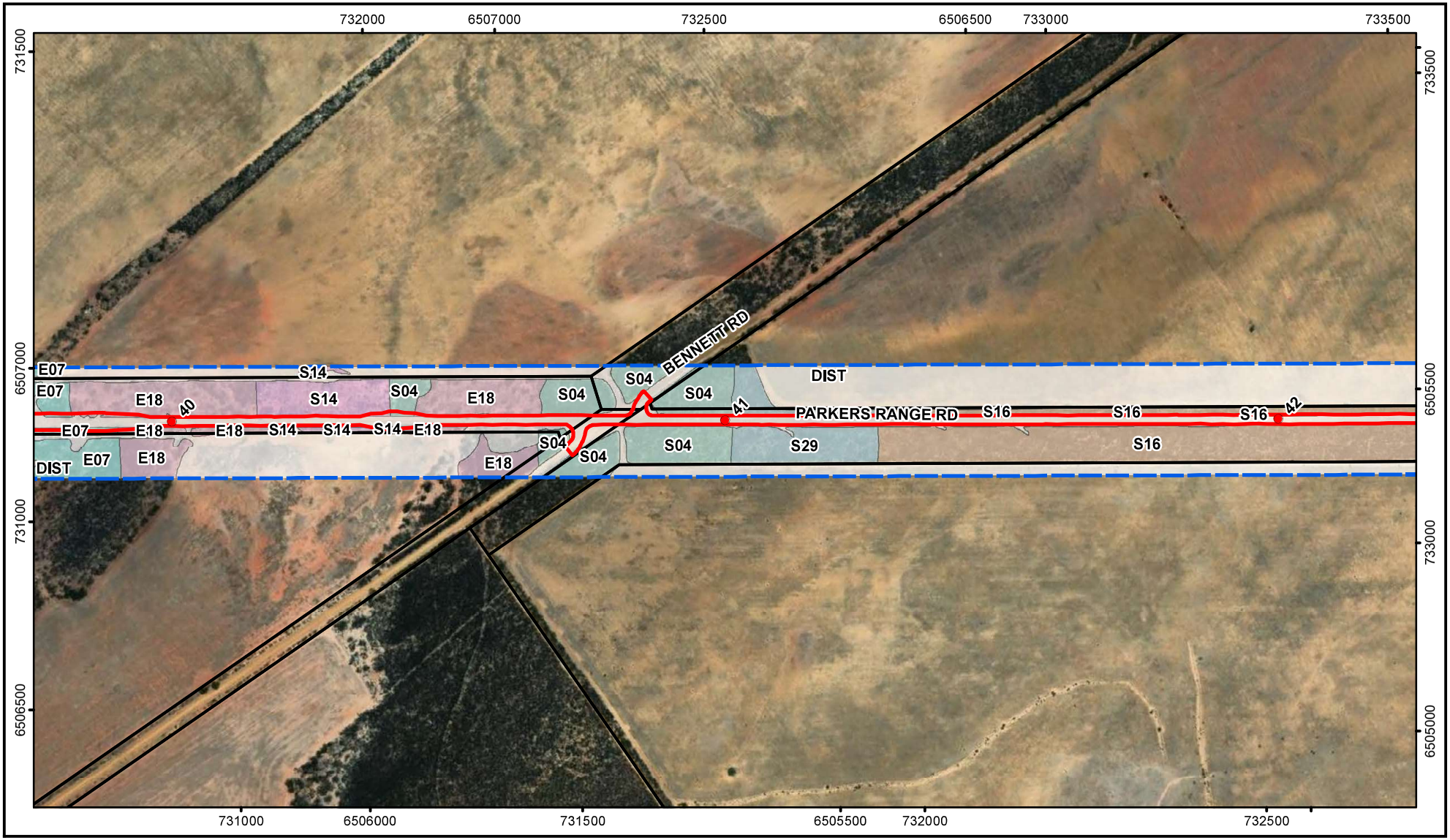
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry
- *Veg Code*
- E07
- E18
- DIST
- E29
- S14
- S16

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 40 km to 42 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
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Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

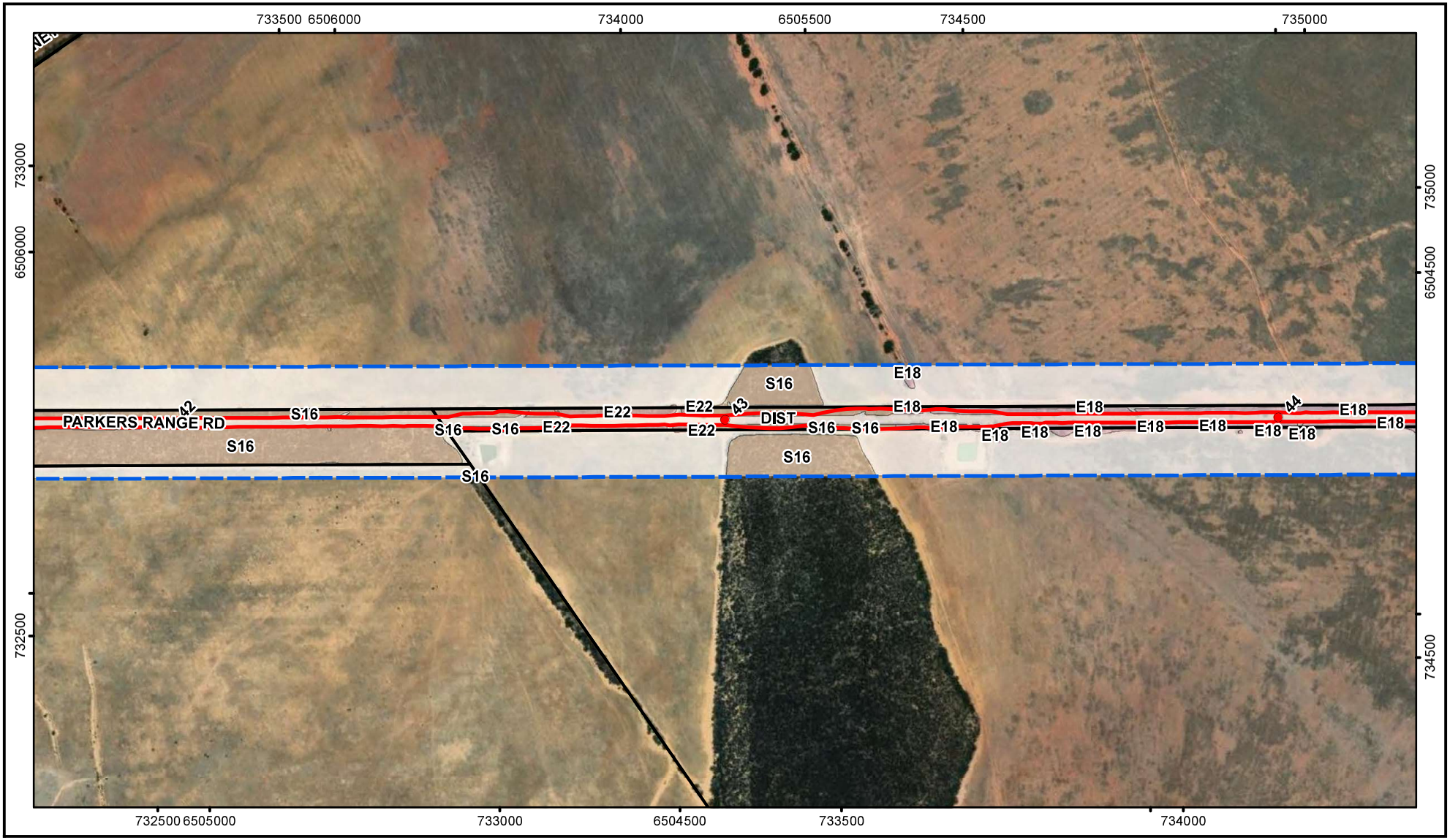
Veg Code
- DIST
- E07
- E18
- S04
- S14
- S16
- S29

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 42 km to 44 km - Vegetation

DRAFT



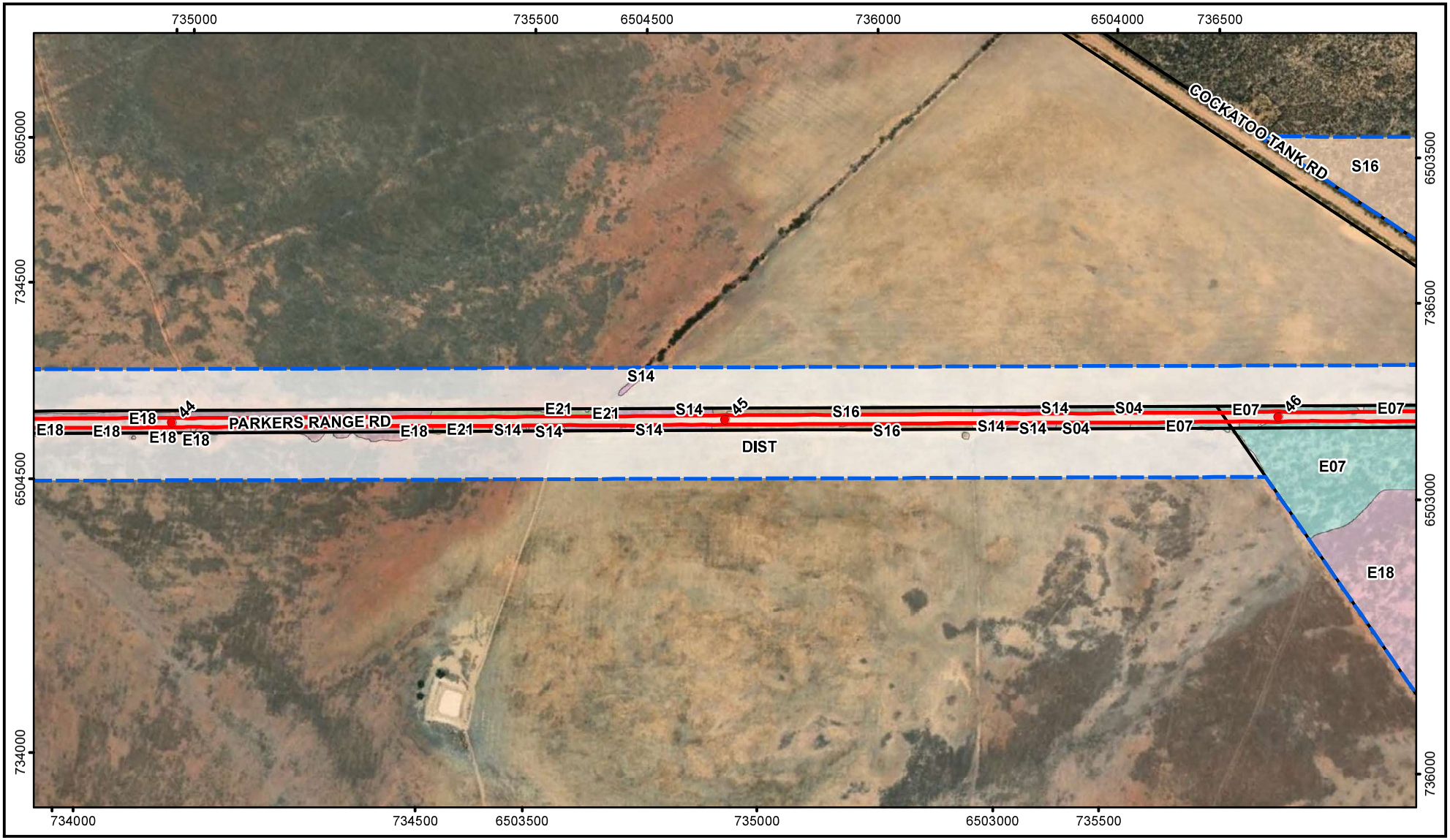
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Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

Legend
Centreline Chainage
Survey Limit
Veg Code
E18
S16
CPS 10197/1
Cadasta Bdry
DIST
E22

0 0.2 km
N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 44 km to 46 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

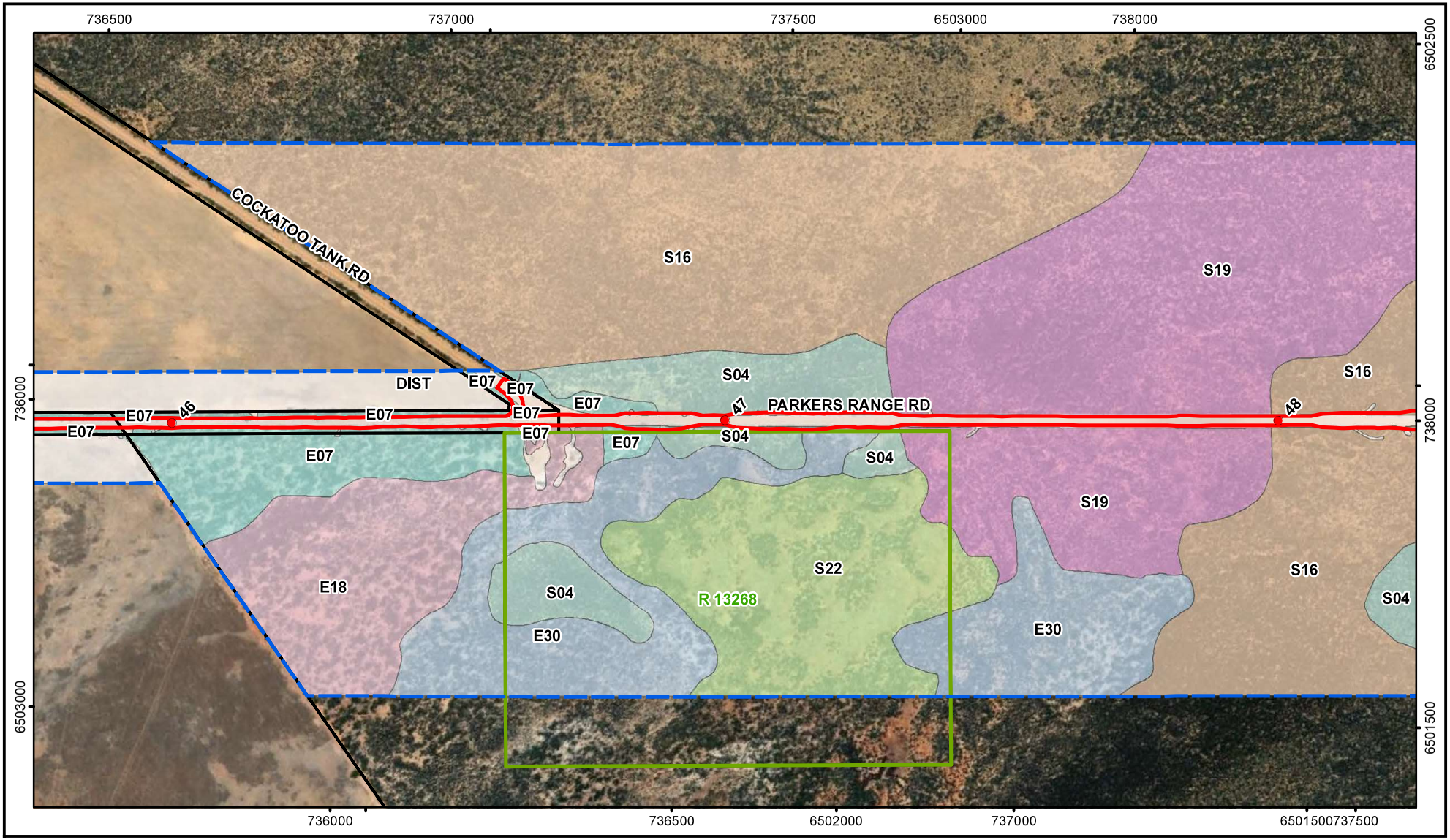
Veg Code
- DIST
- E07
- E18
- E21
- S04
- S14
- S16

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 46 km to 48 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

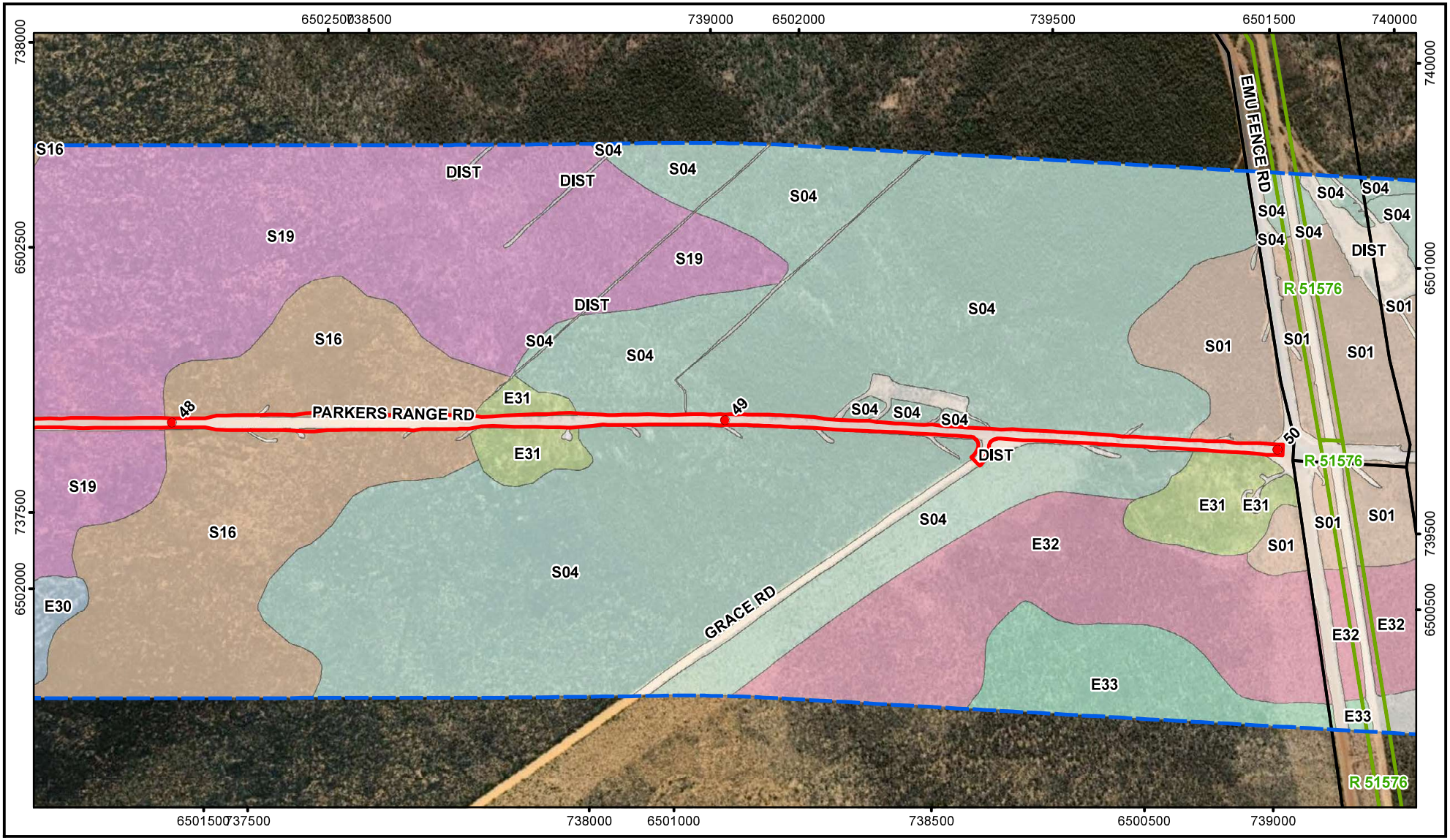
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg Code
- DIST
- E07
- E18
- E30
- S04
- S16
- S19
- S22

0 0.2 km
N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 48 km to 50 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_04_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total area of CPS 10197/1 is 96.97 ha including the overlapping MS1118 of 32.28 ha
Land to be cleared 11.11ha in CPS 10197/1 (excluding MS1118 overlap) plus 0.01 ha in MS1118.
Existing cleared land 52.58 ha in CPS 10197/1 (excluding MS1118 overlap) plus 32.27 ha in MS118
For detailed legend refer to report

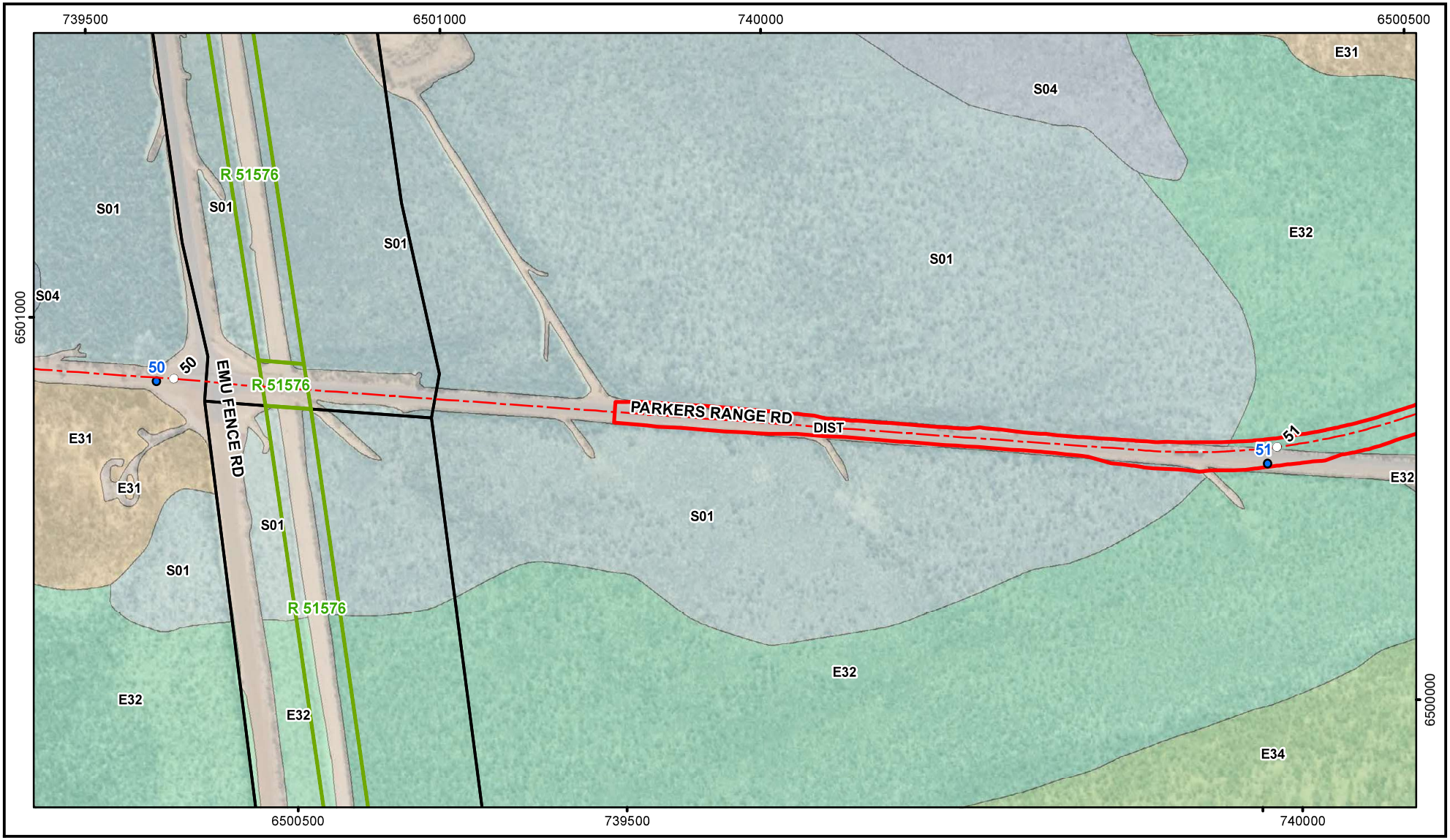
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg Code
- DIST
- E30
- E31
- E32
- E33
- S01
- S04
- S16
- S19

0 0.2 km
N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 50km to Chn 51km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

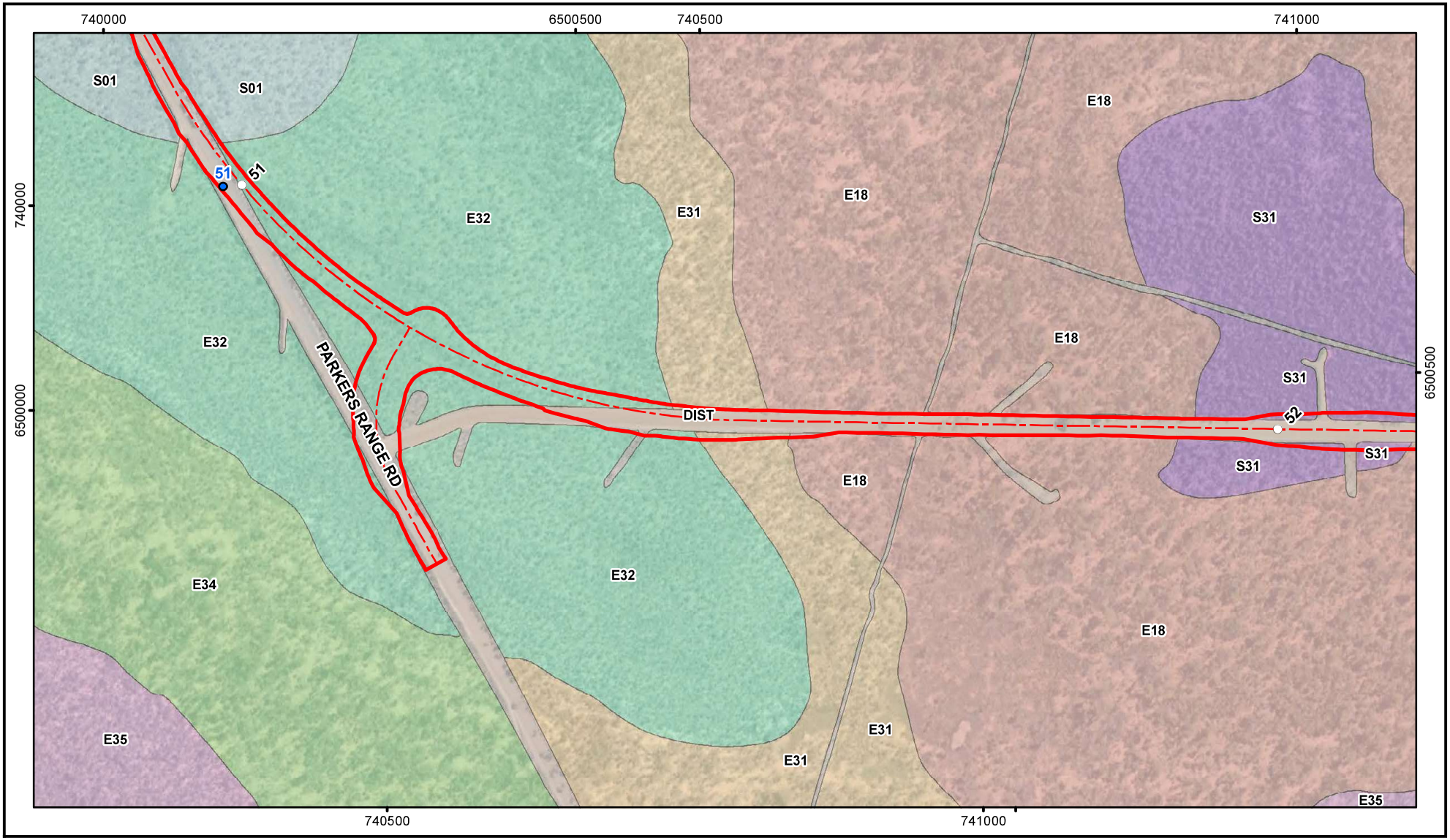
Legend
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg_Code
- E32
- S01
- DIST
- E33
- S04
- E31
- E34

0 100 m
N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 51km to Chn 52km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadasta Bdry

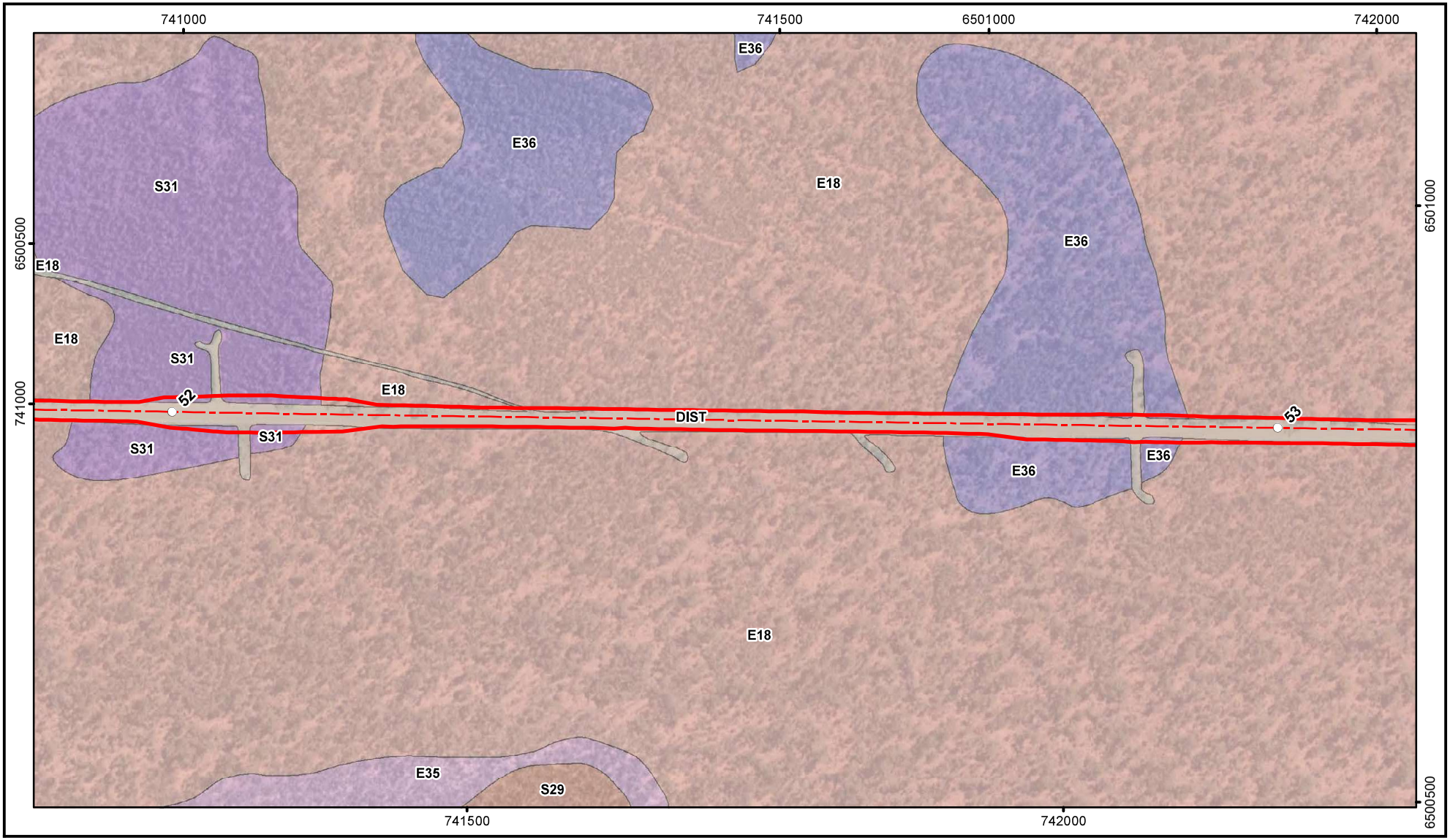
Veg_Code: E31, E35, DIST, E32, S01, E18, E34, S31

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 52km to Chn 53km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadasta Bdry

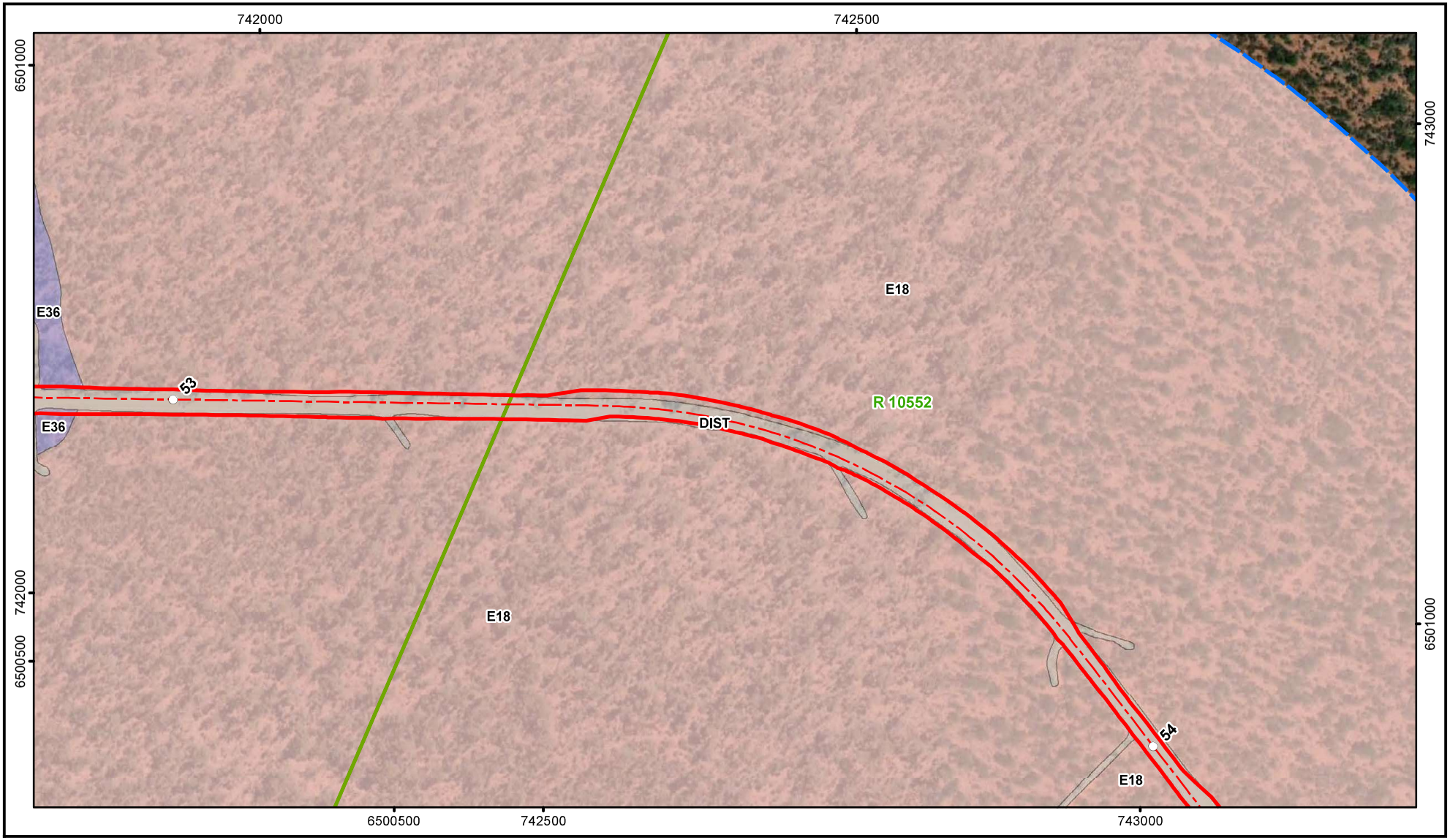
Veg_Code: E18, E36, DIST, E35, S29, S31

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 53km to Chn 54km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

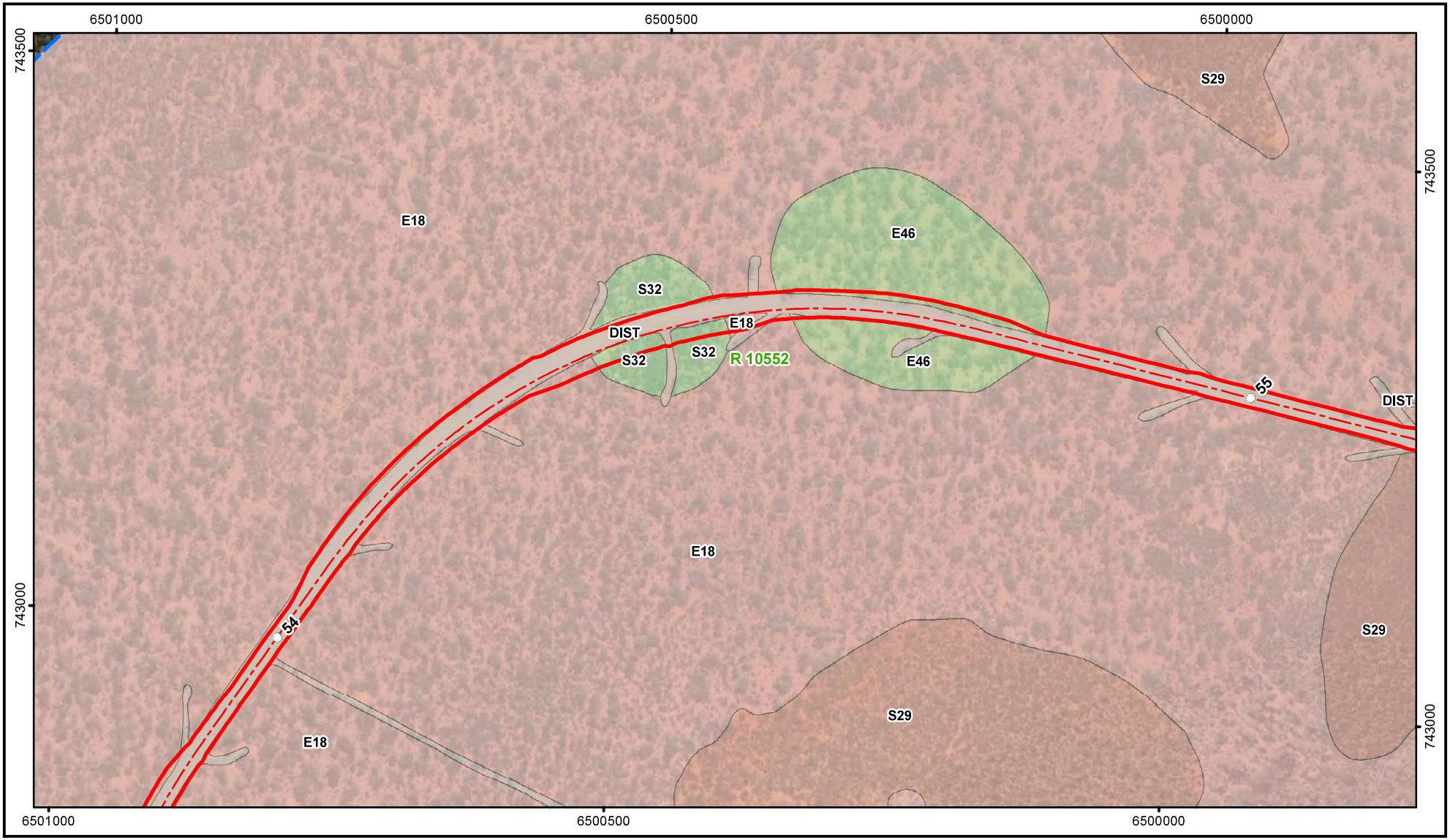
Legend
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry
- Veg_Code
- DIST
- E18
- E36

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 54km to Chn 55km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

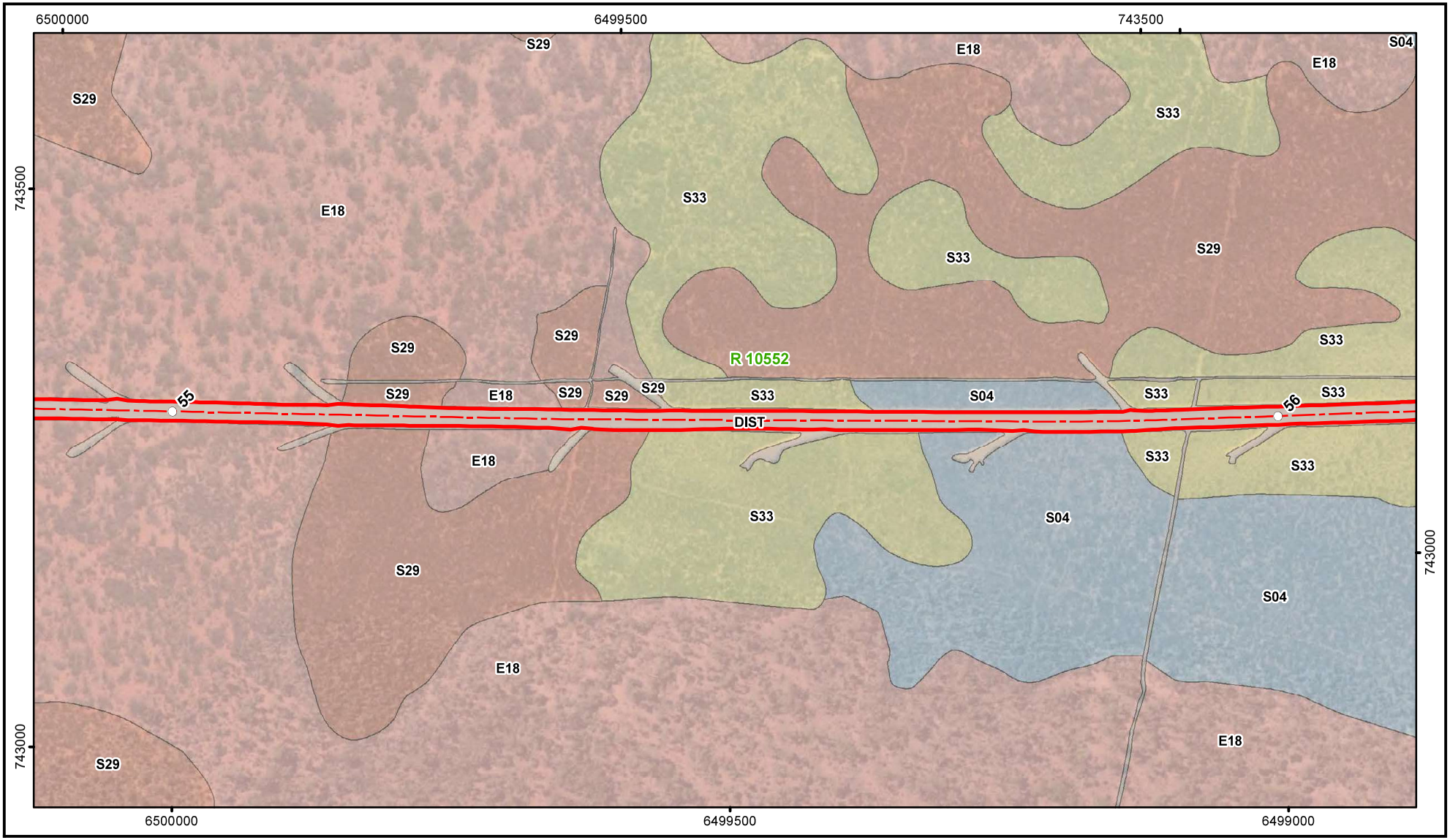
Legend
Centreline Chainage
Clearing Application Section3
Survey Limit
Cadastral Reserves
Cadasta Bdry
Veg_Code
E18
S29
DIST
E46
S32

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 55km to Chn 56km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

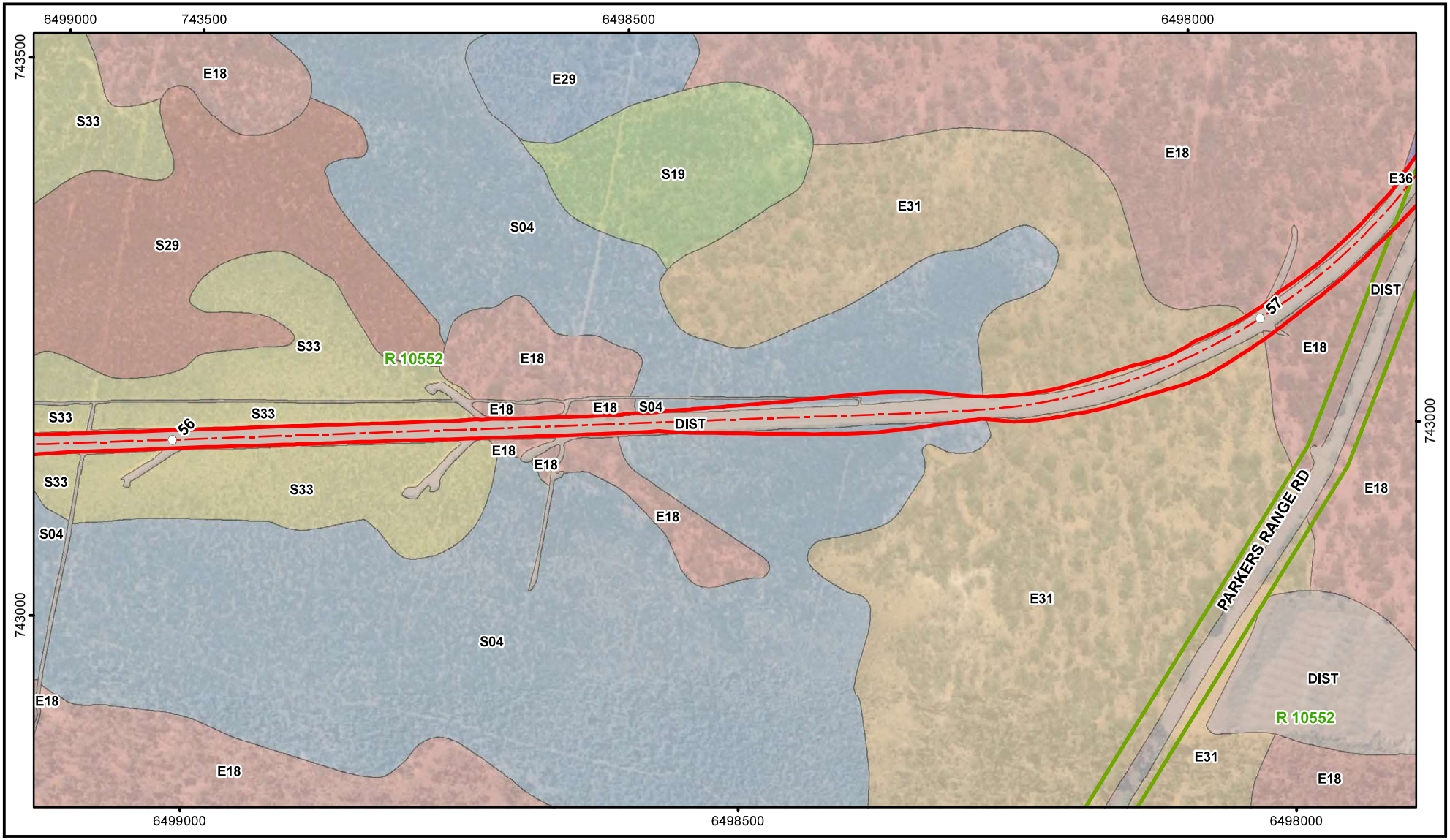
Legend
Centreline Chainage
Clearing Application Section3
Survey Limit
Cadastral Reserves
Cadasta Bdry
Veg_Code
DIST
E18
S04
S29
S33

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 56km to Chn 57km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

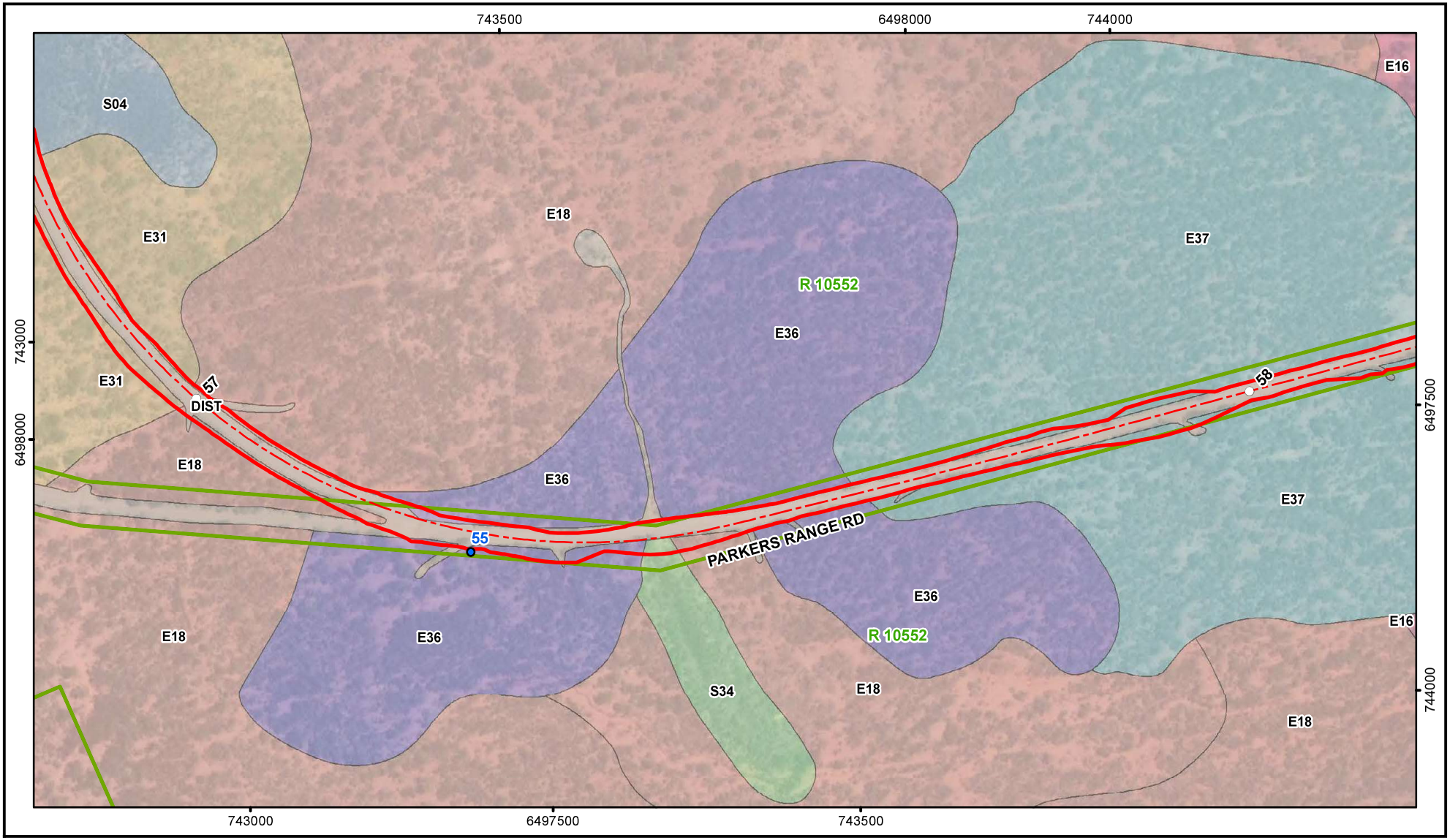
Veg_Code: DIST, E18, E29, E31, E36, S04, S19, S29, S33

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 57km to Chn 58km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

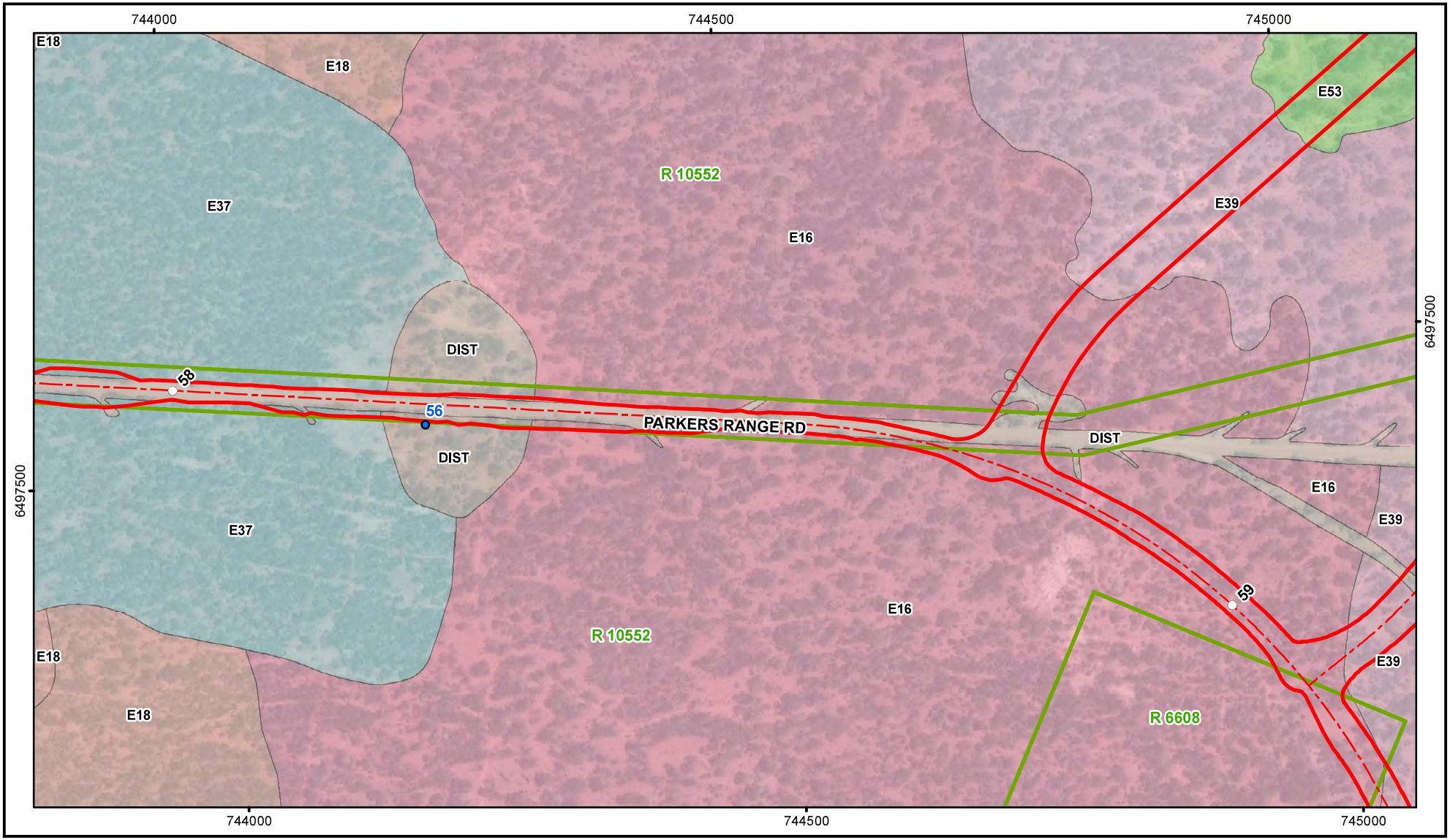
Veg_Code: E18, E37, DIST, E31, S04, E16, E36, S34

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 58km to Chn 59km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

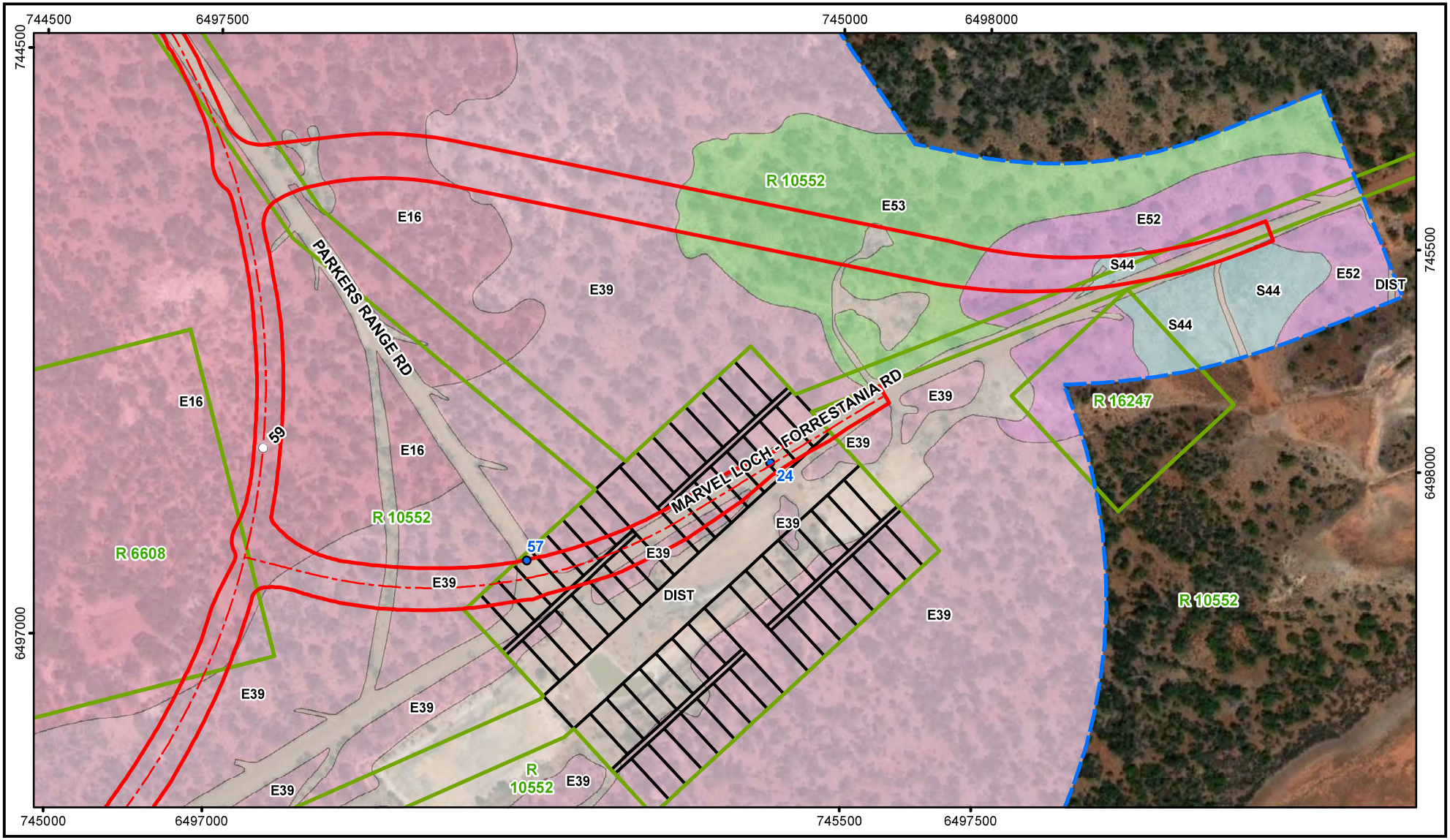
Legend
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg_Code
DIST, E16, E18, E37, E39, E53

0 100 m
N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Marvel Loch - Forrestonia Road Connection - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

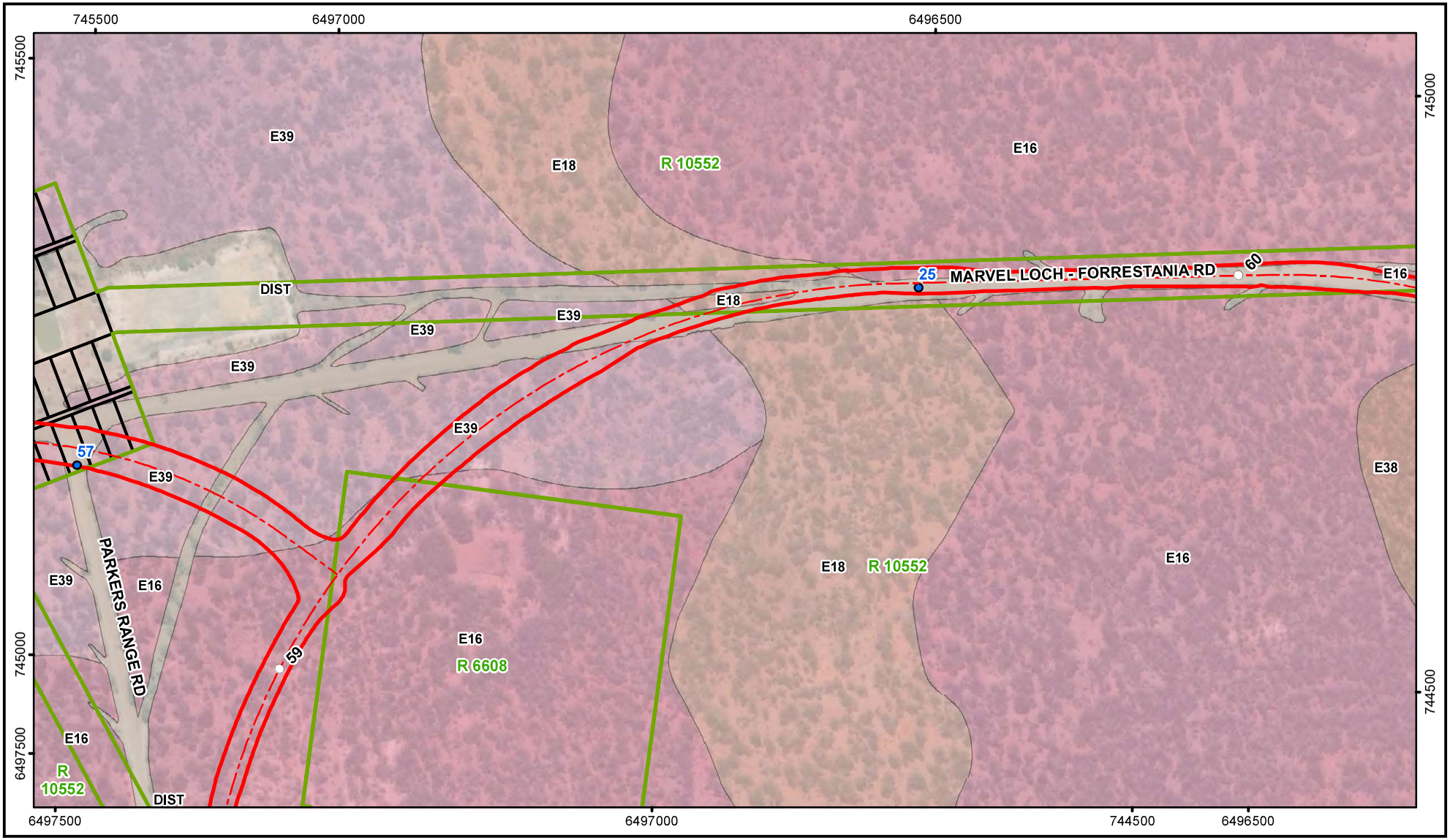
Legend
- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg_Code: E16, E39, E52, E53, S44, DIST

0 100 m

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 59km to Chn 60km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg_Code

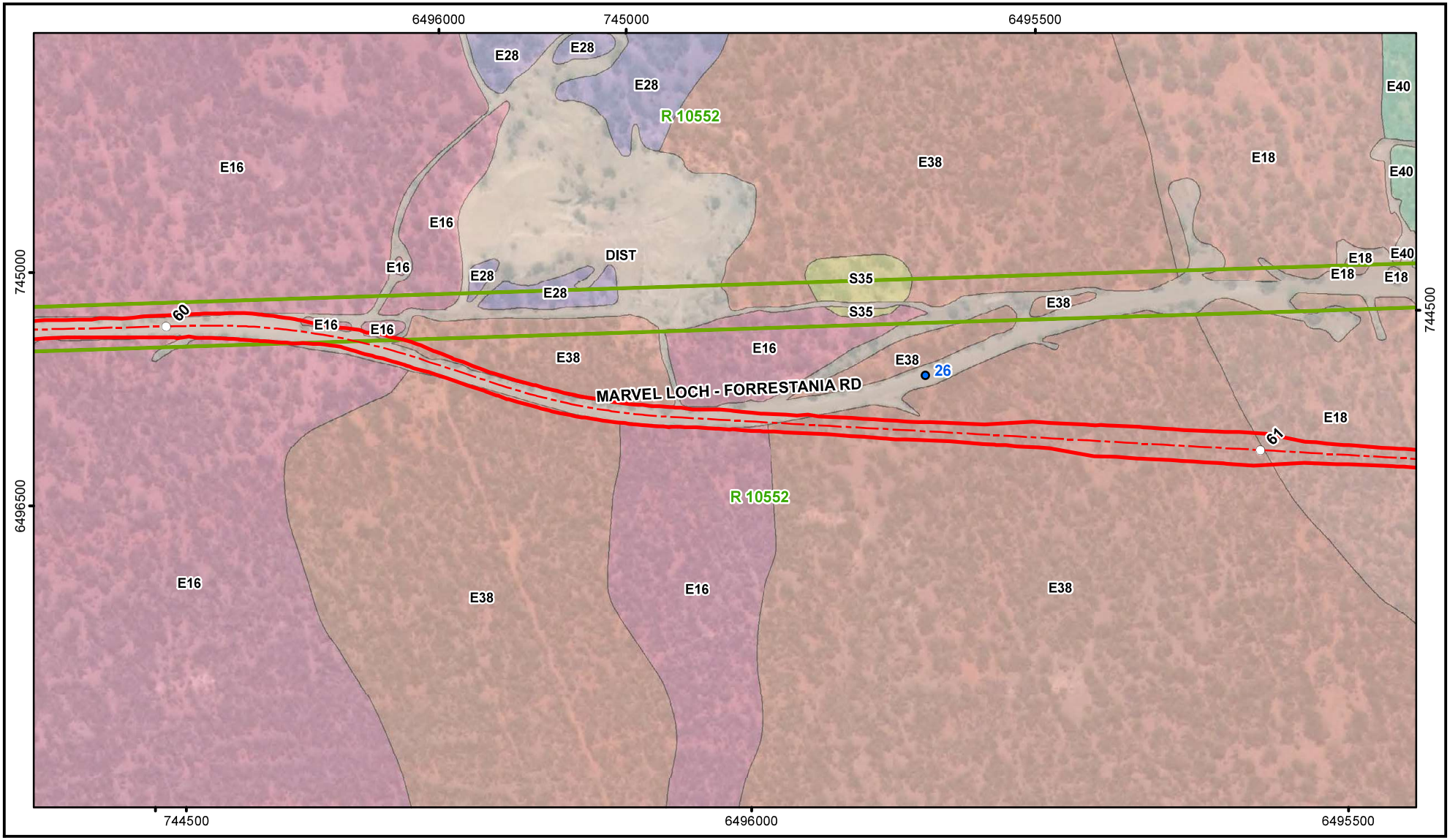
- DIST
- E16
- E18
- E38
- E39

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 60km to Chn 61km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

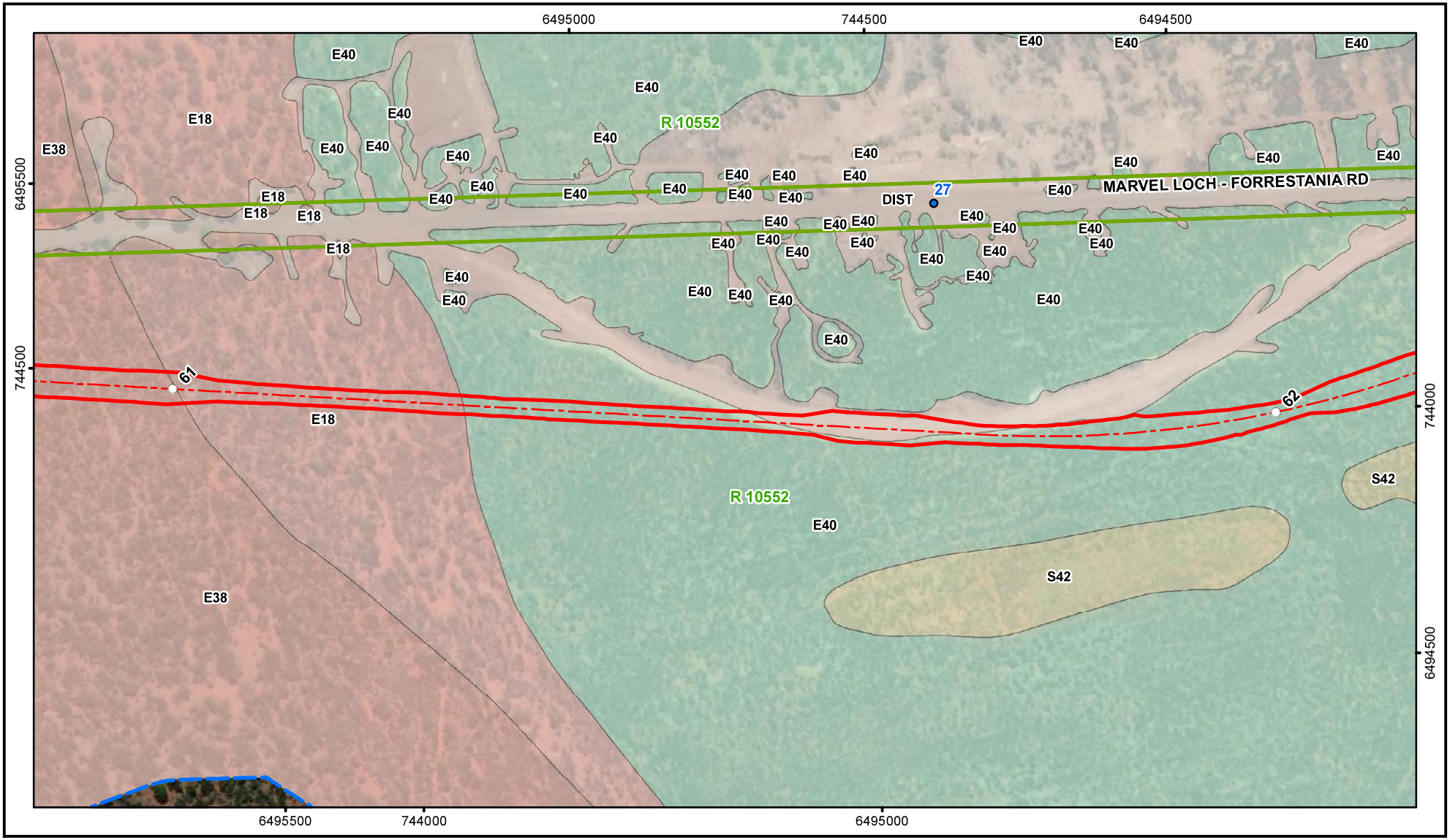
Legend
- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg_Code
- DIST
- E16
- E18
- E28
- E38
- E40
- S35

0 100 m

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 61km to Chn 62km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

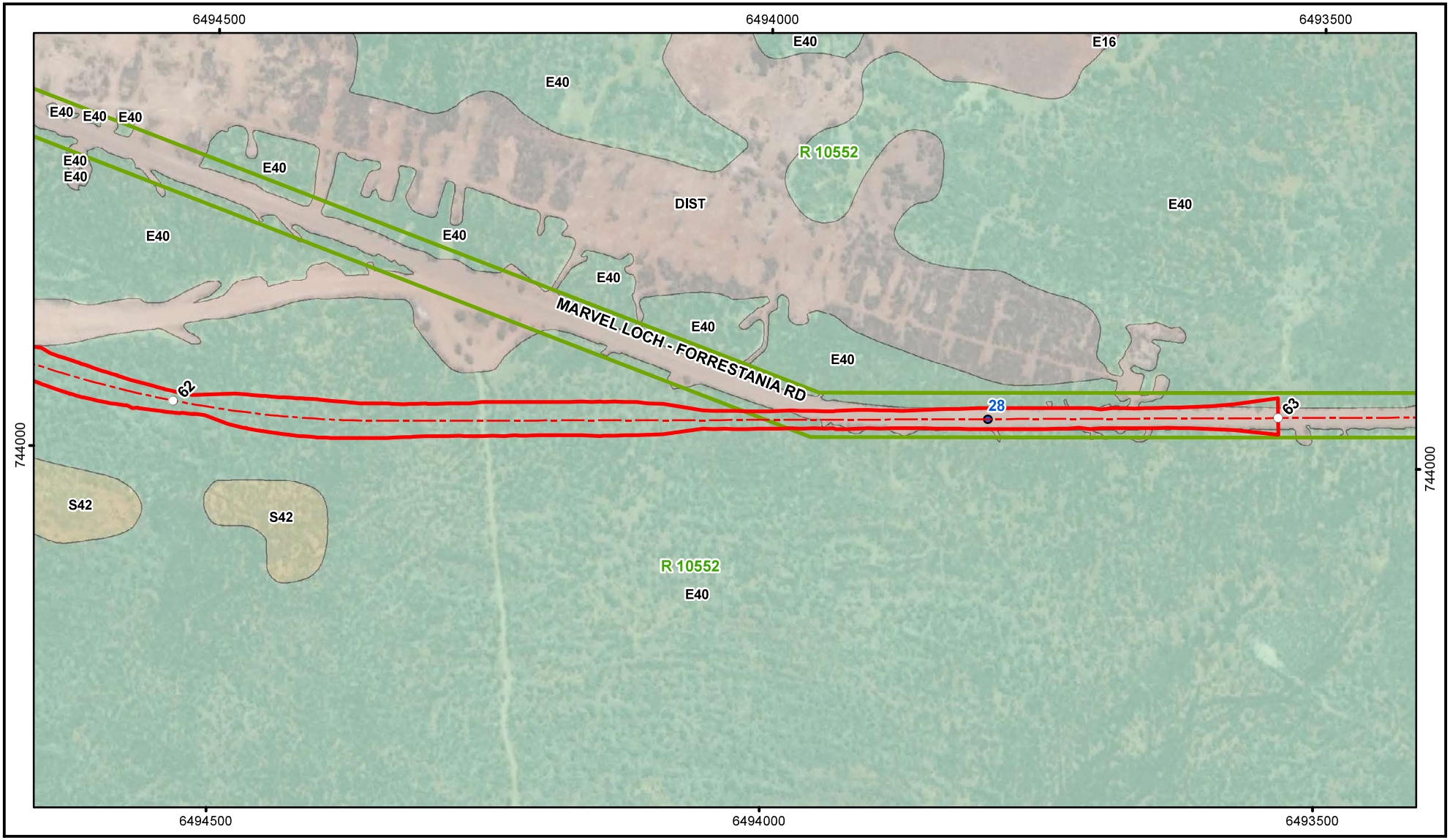
Legend
- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Veg_Code
- DIST
- E18
- E38
- E40
- S42

0 100 m

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 62km to Chn 63km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_06_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Land to be cleared 14.96 ha Existing cleared land 19.01 ha
For detailed legend refer to report

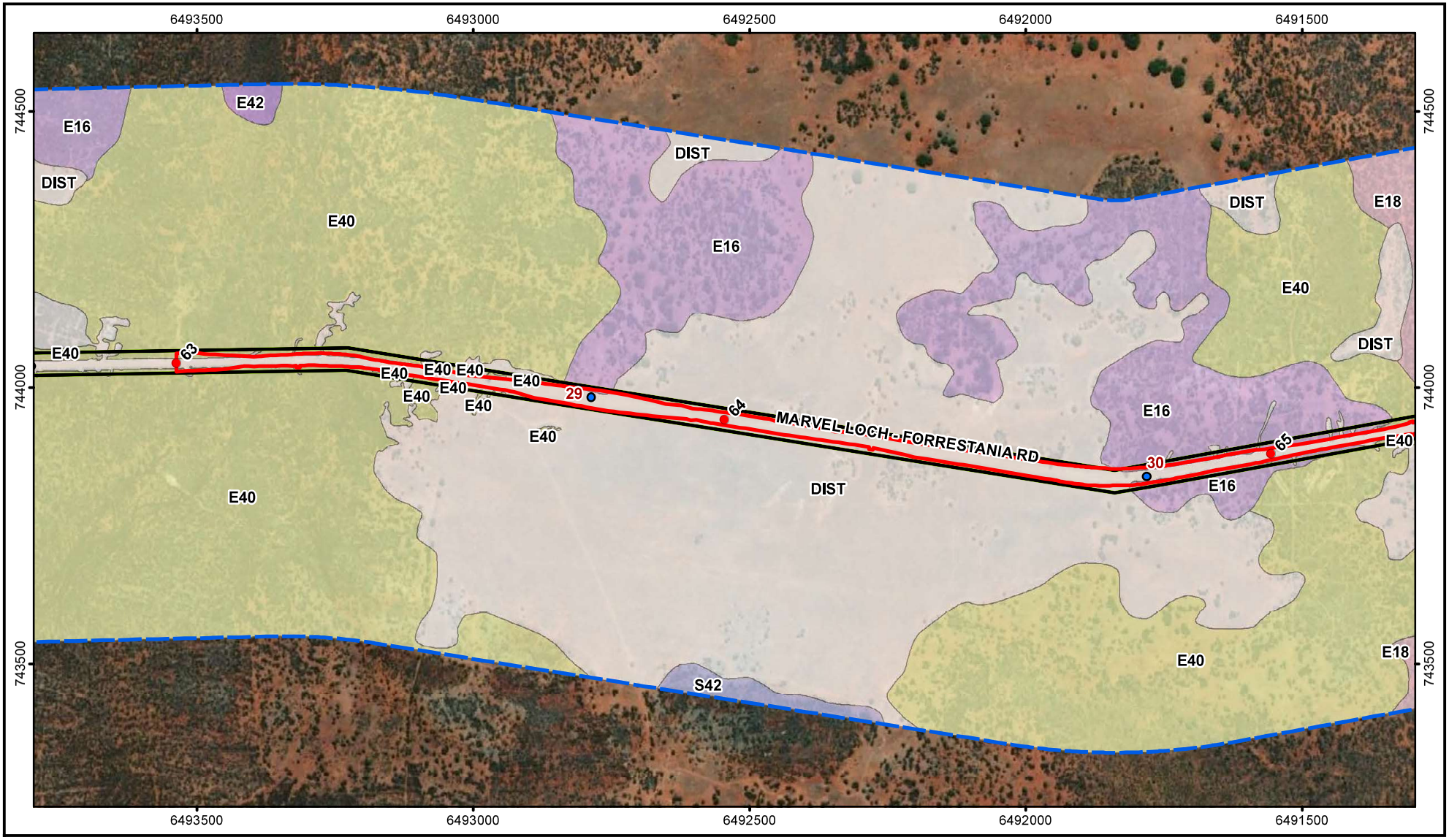
Legend
- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry
- Veg_Code: E16, S42, DIST, E40

0 100 m

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 63 km to 65 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves
- Veg Code: E16, E18, E40, DIST, E42, S42

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 65 km to 67 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

Veg Code

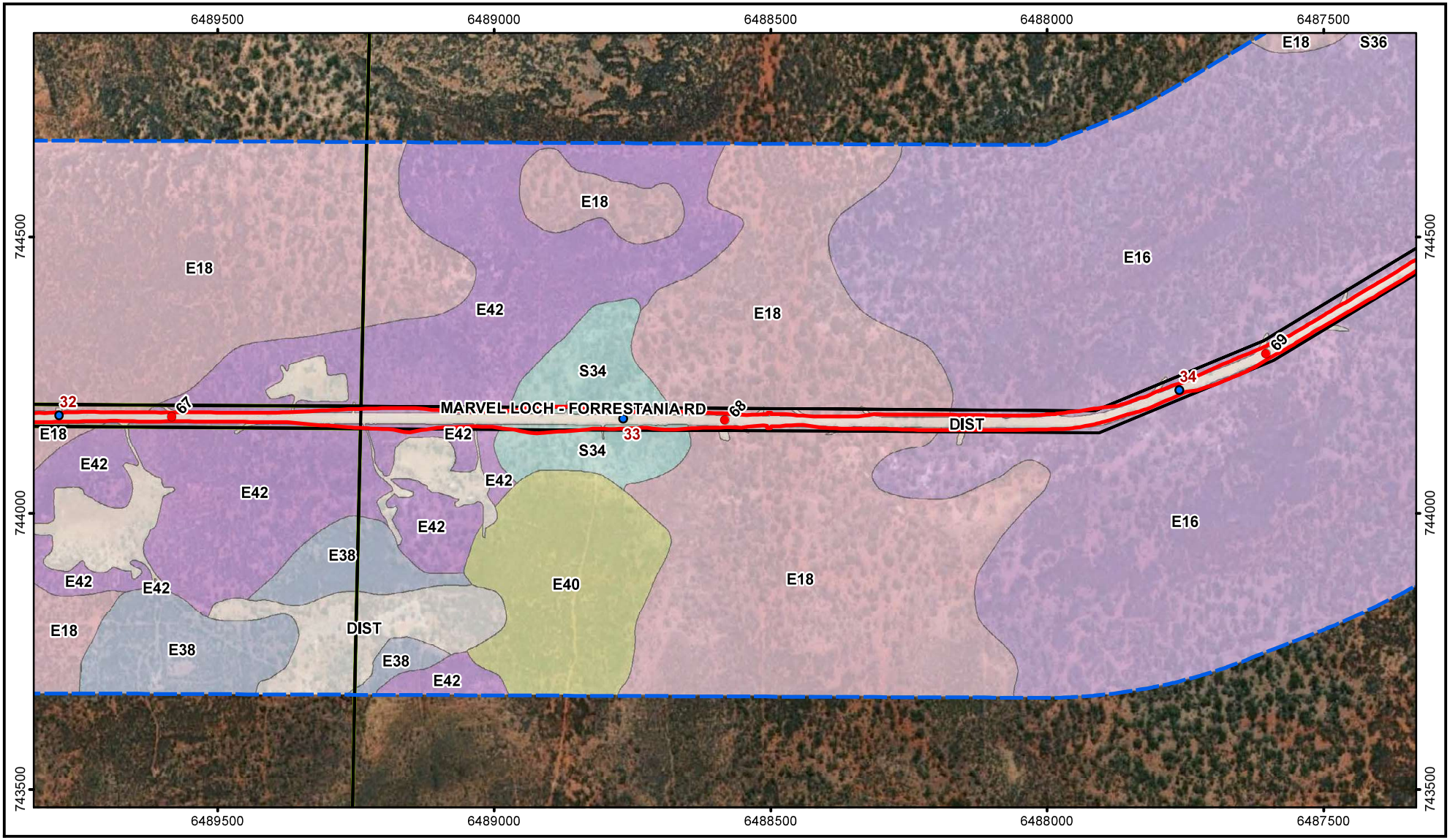
- DIST
- E16
- E18
- E38
- E40
- E42

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 67 km to 69 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

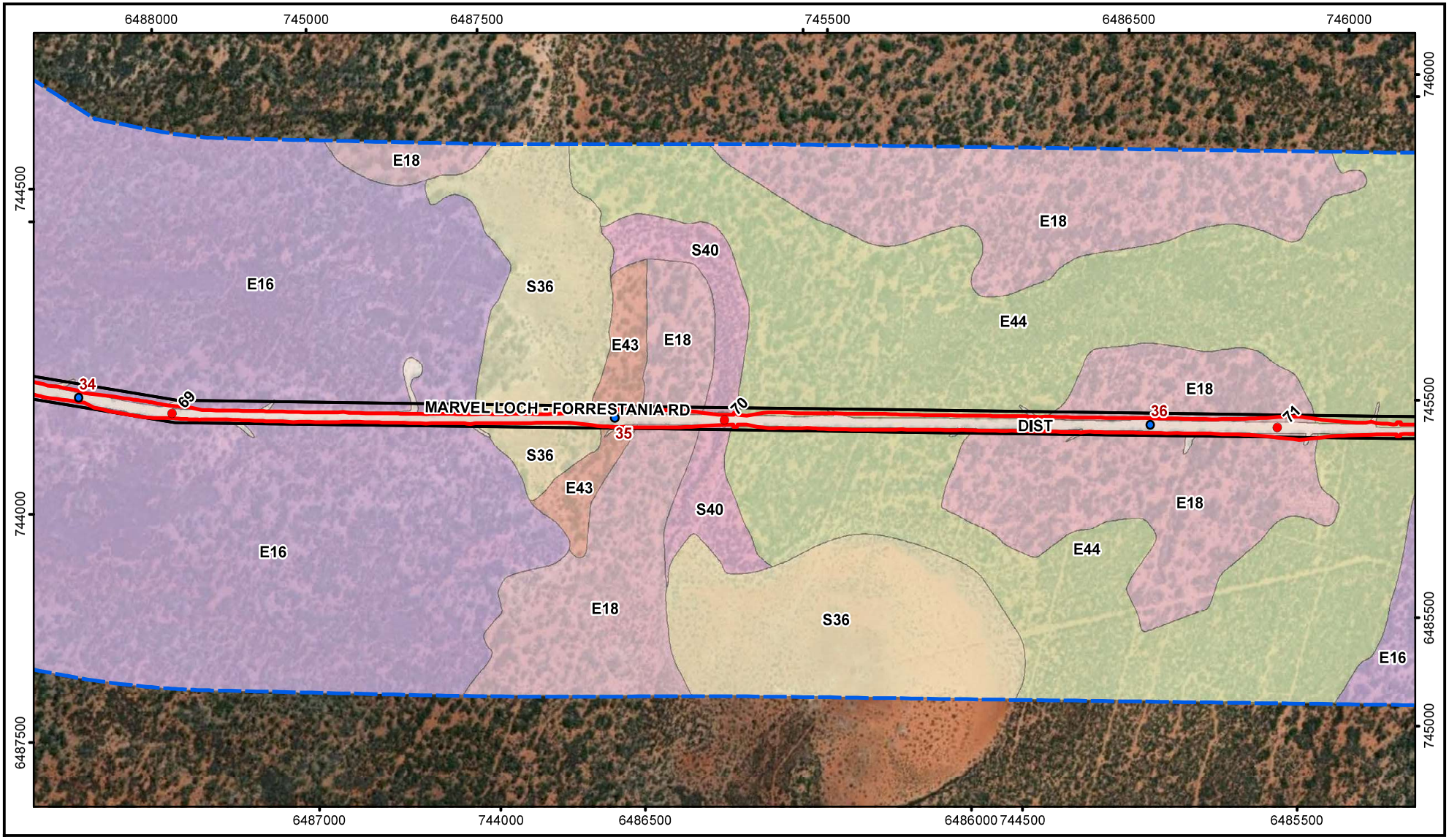
Veg Code: DIST, E16, E18, E38, E40, E42, S34, S36

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 69 km to 71 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry

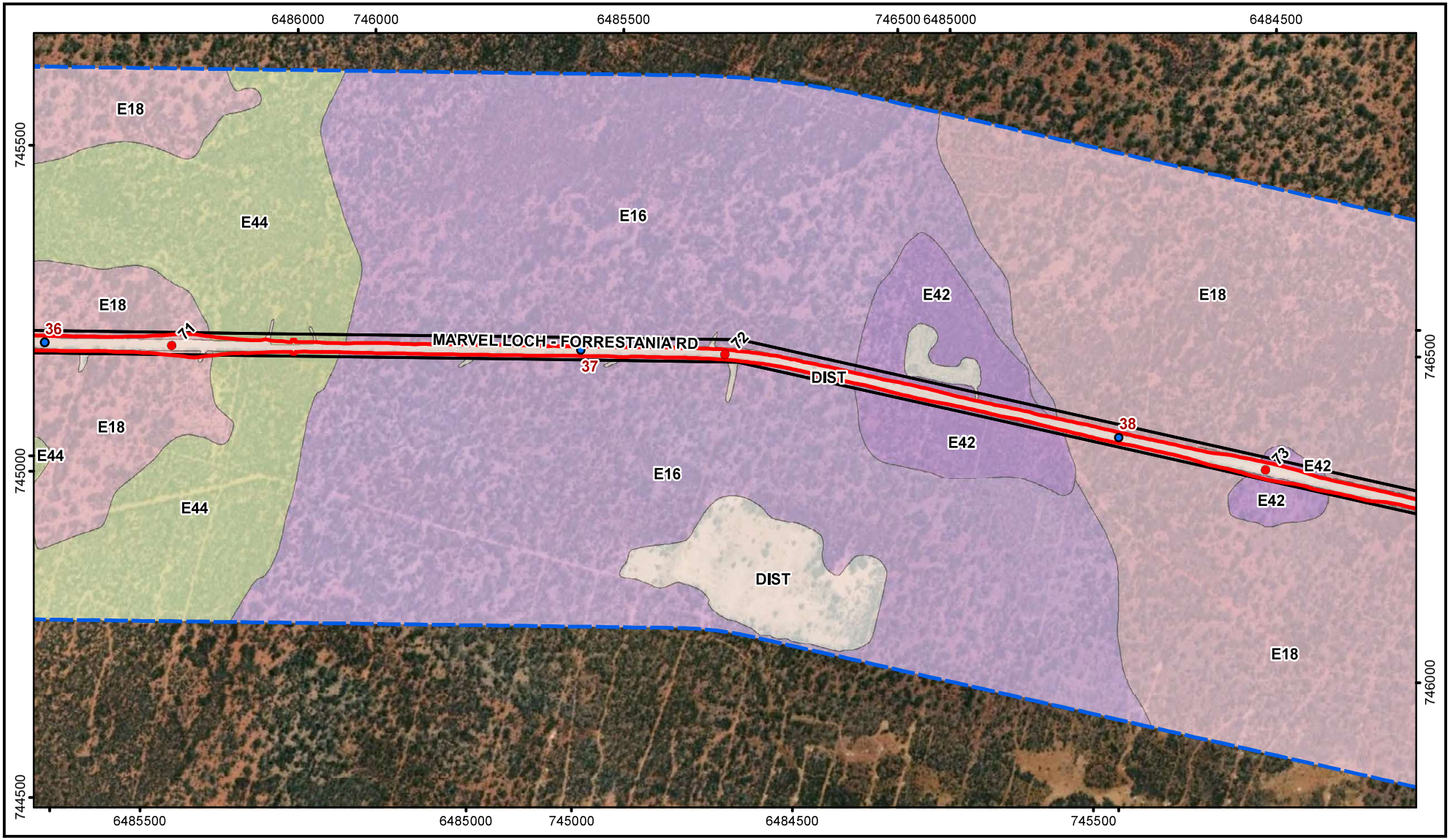
Veg Code
- DIST
- E16
- E18
- E43
- E44
- S36
- S40

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 71 km to 73 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry

Veg Code

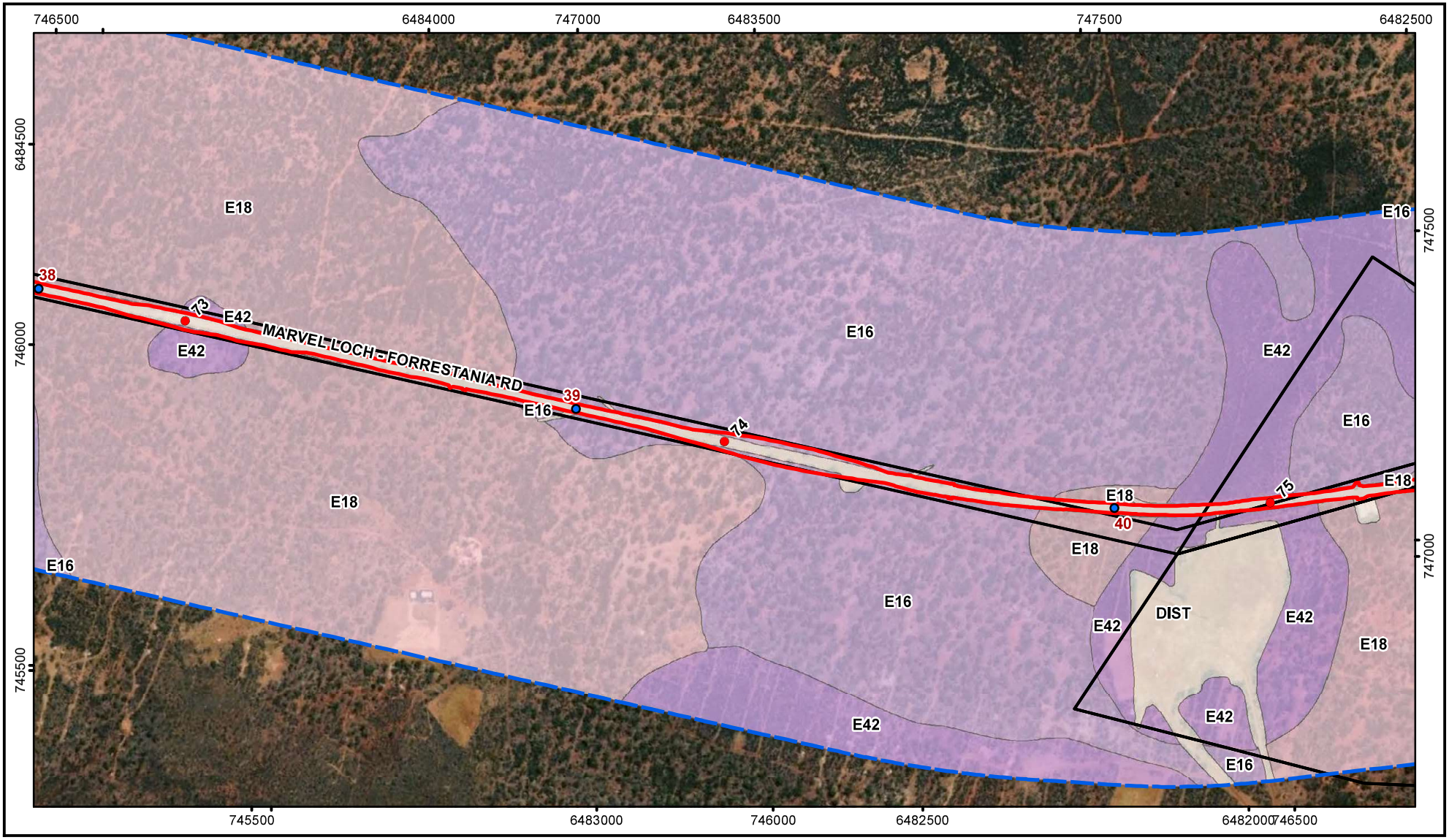
- E16
- E42
- DIST
- E18
- E44

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 73 km to 75 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry

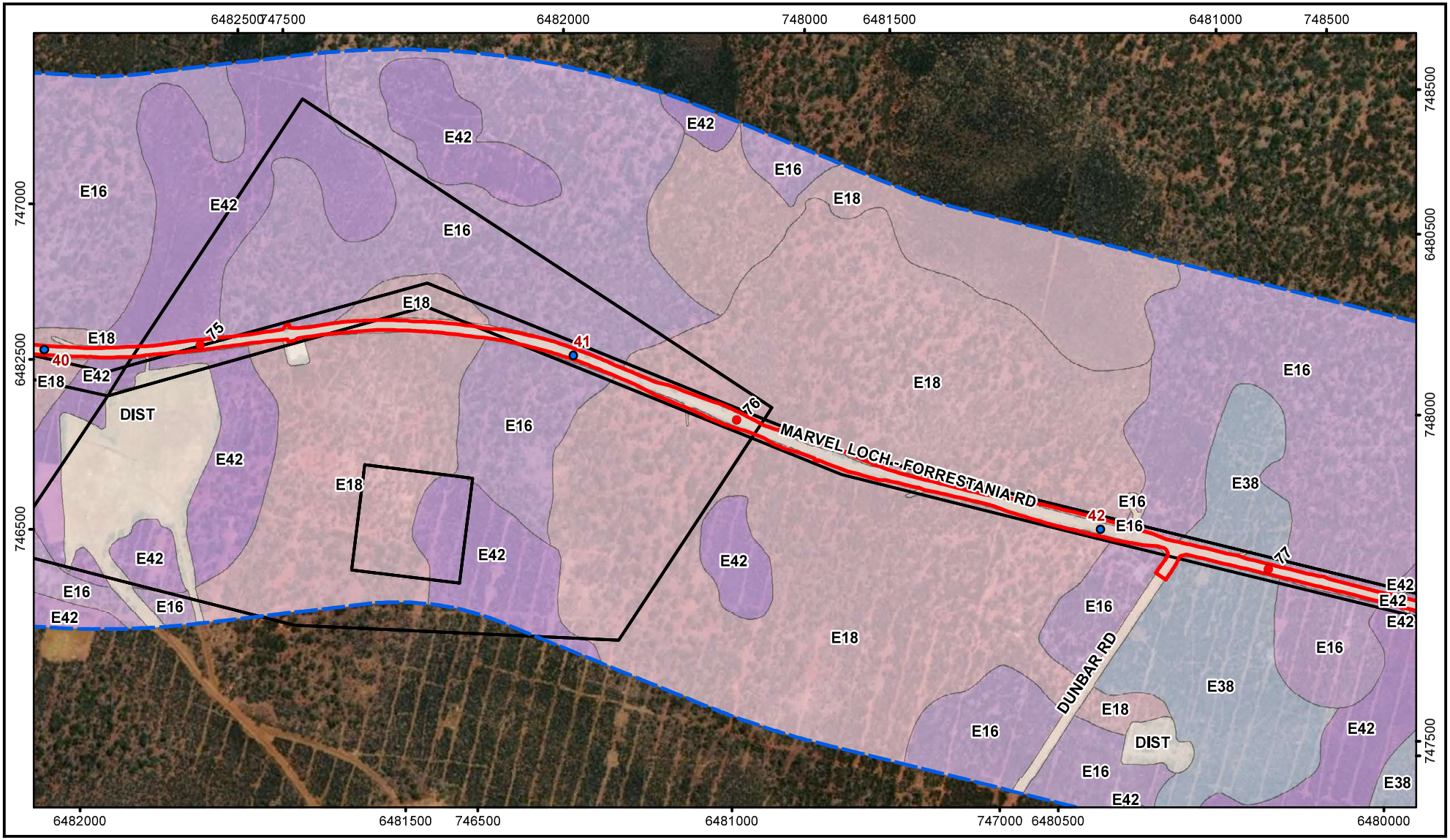
Veg Code
- E16
- E42
- DIST
- E18

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 75 km to 77 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry

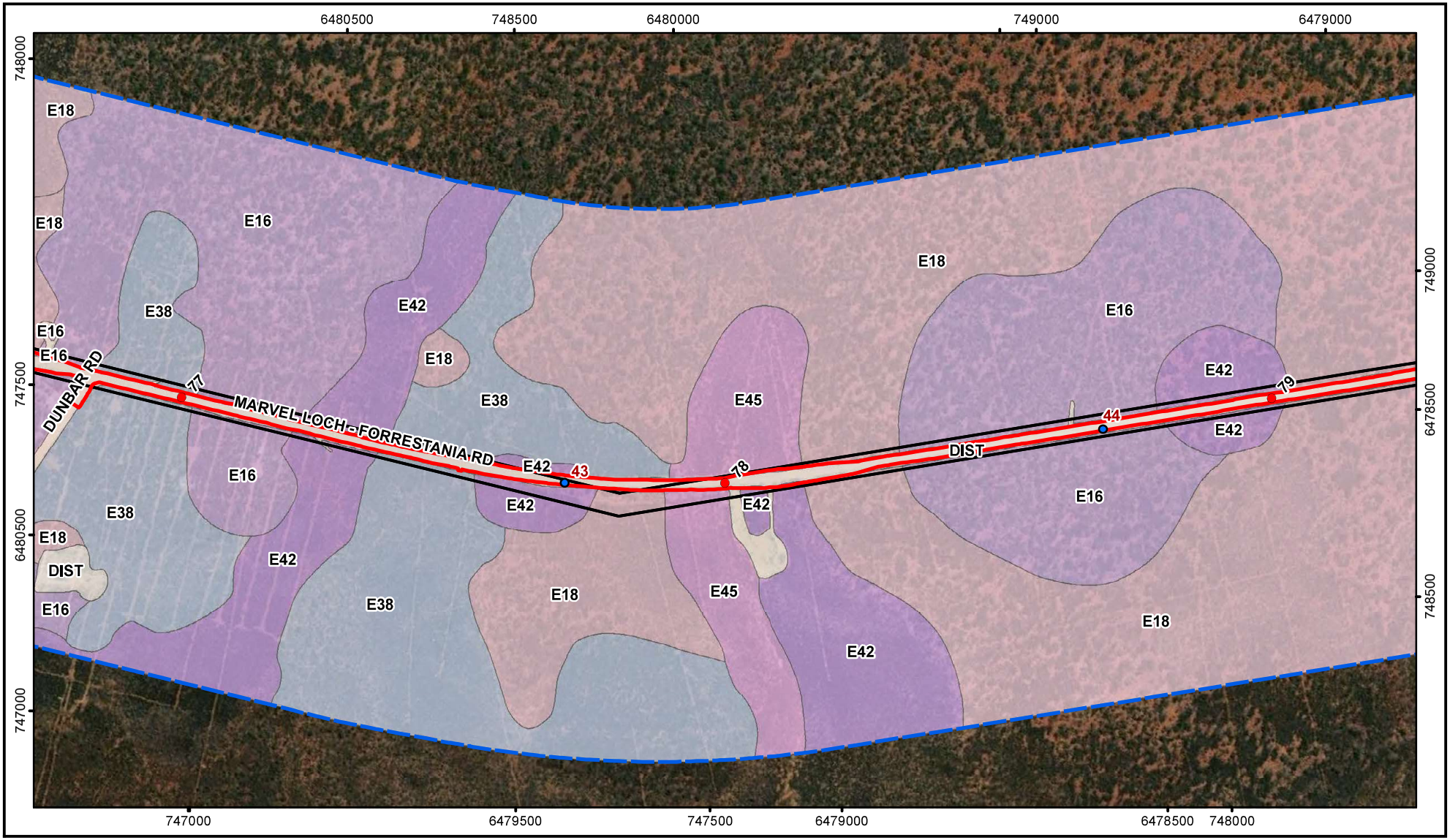
Veg Code
- E16
- E18
- E38
- E42
- DIST

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 77 km to 79 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry

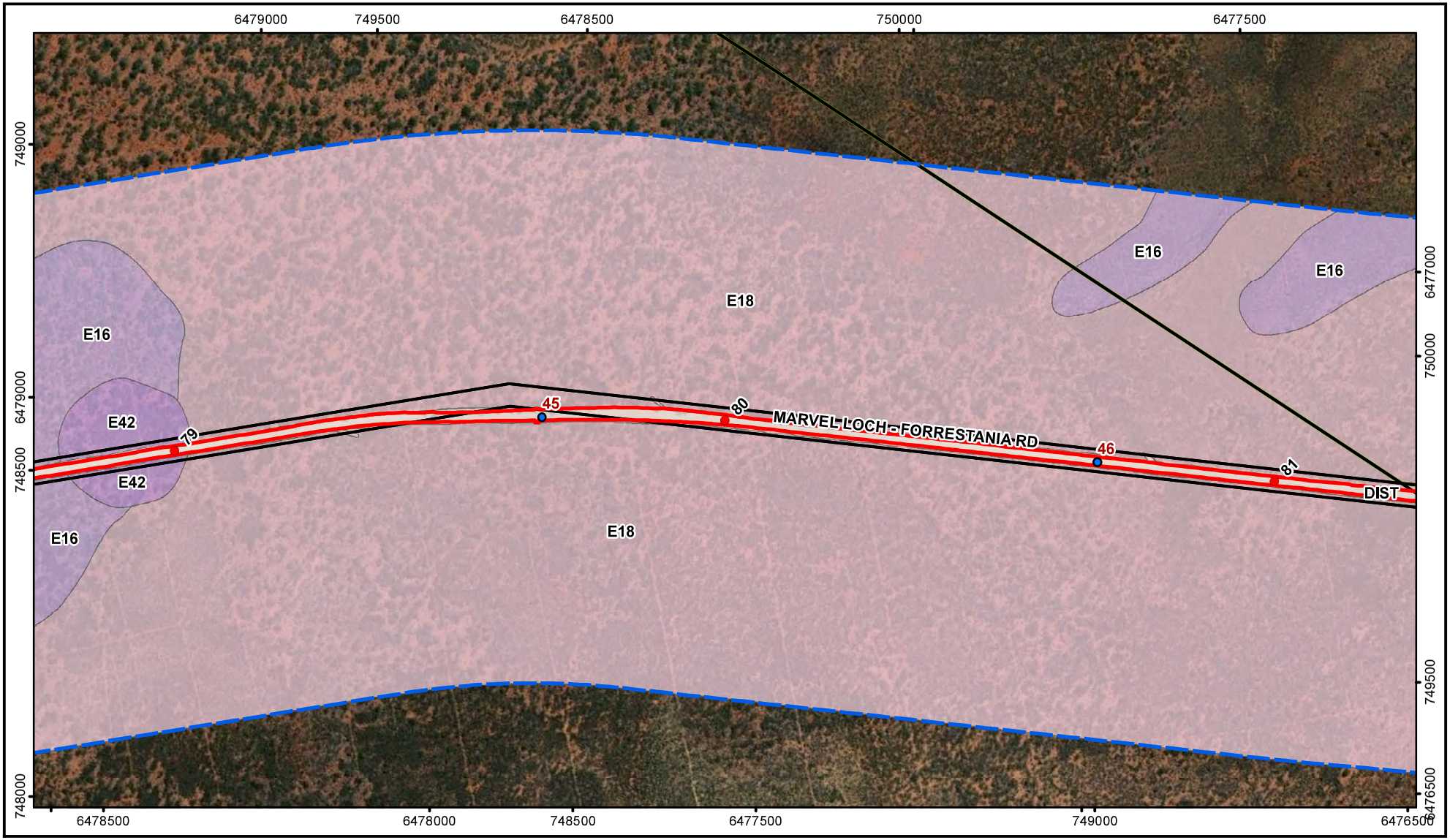
Veg Code
- DIST
- E16
- E18
- E38
- E42
- E45

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 79 km to 81 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

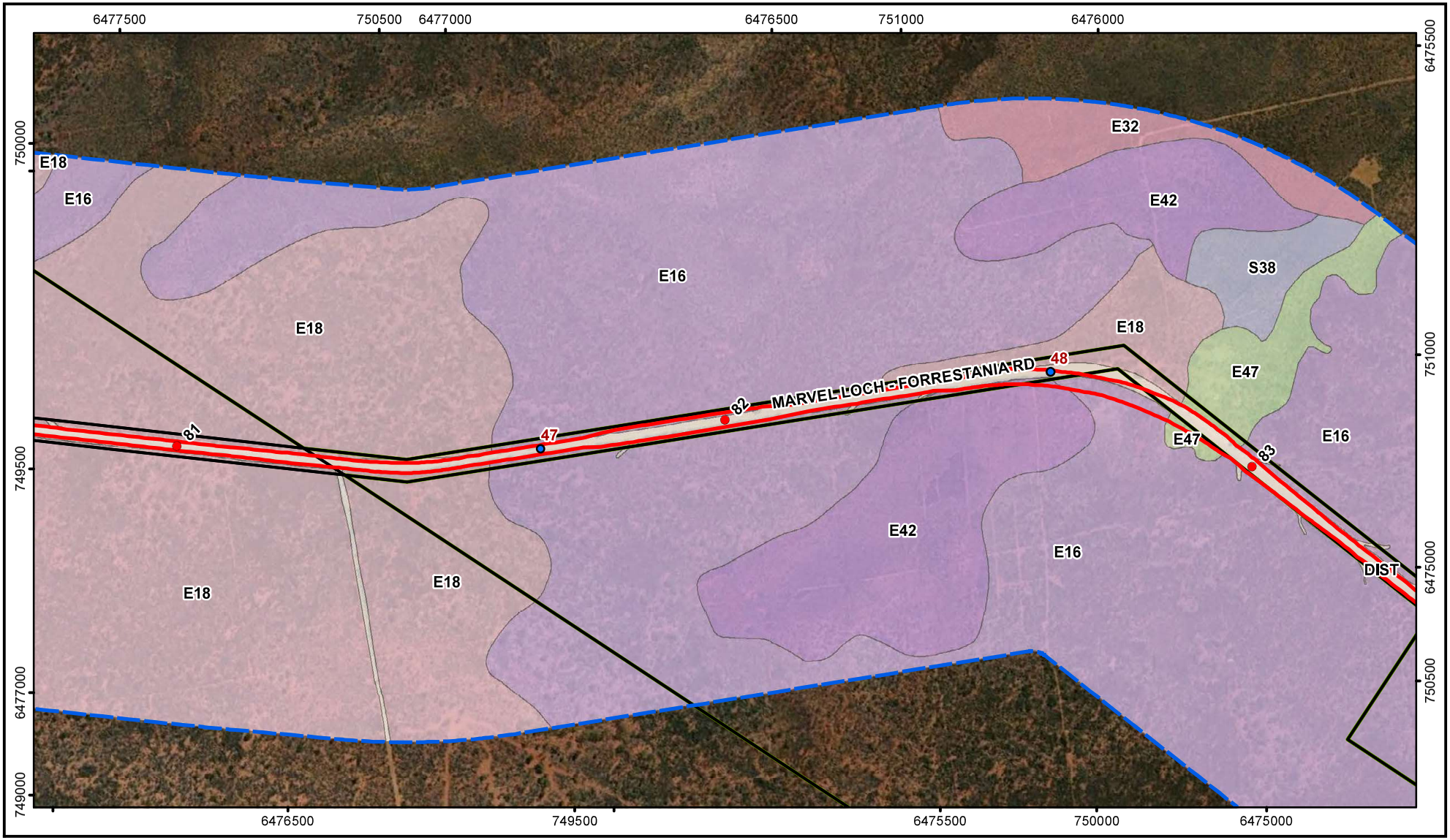
Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves
- Veg Code
- E16
- E42
- DIST
- E18

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 81 km to 83 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

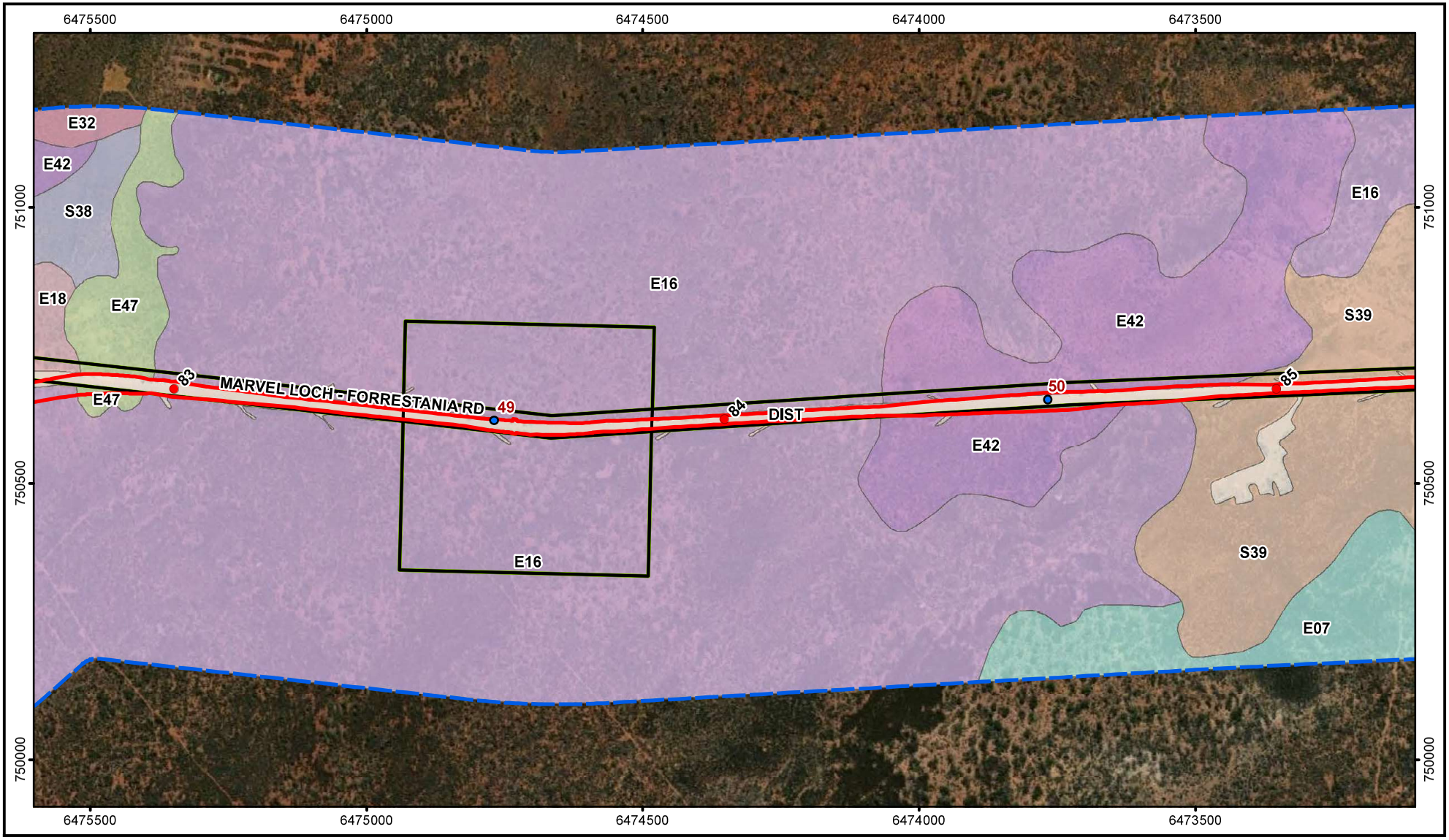
Veg Code
- E18
- E47
- DIST
- E32
- S38
- E16
- E42

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 83 km to 85 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

Veg Code

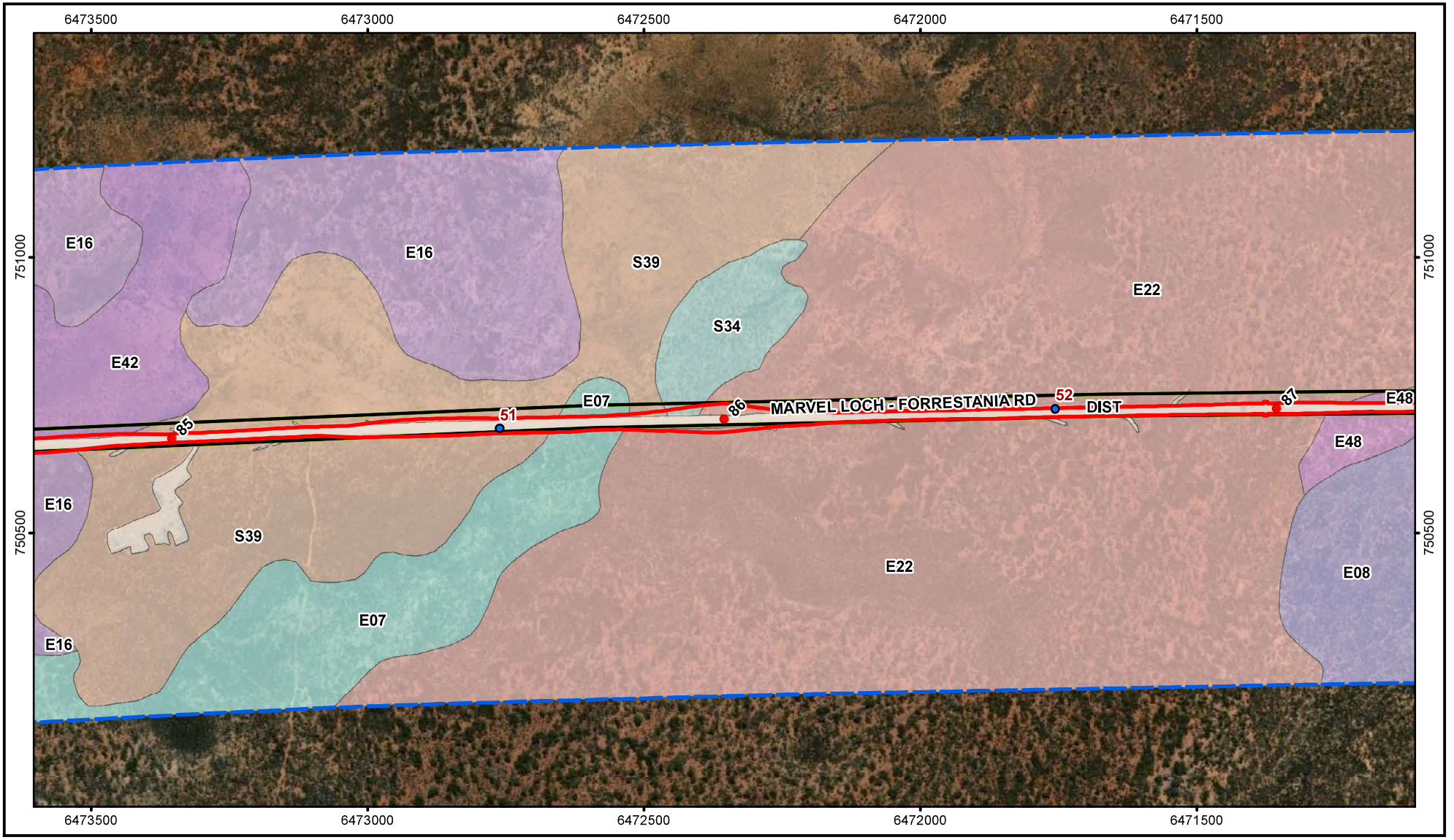
- DIST
- E07
- E16
- E18
- E32
- E42
- E47
- S38
- S39

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 85 km to 87 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

Veg Code

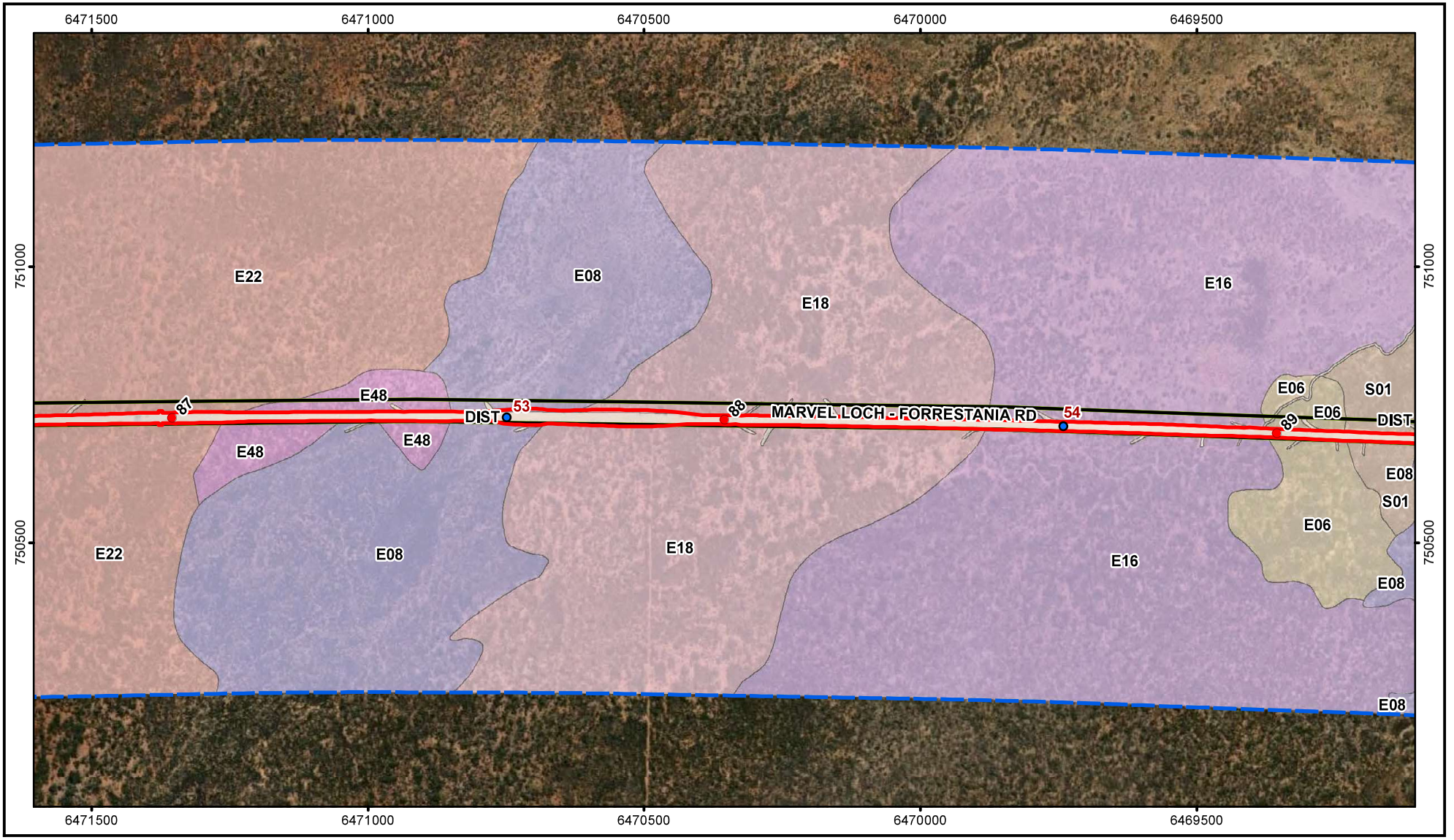
- DIST
- E07
- E08
- E16
- E22
- E42
- E48
- S34
- S39

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 87 km to 89 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

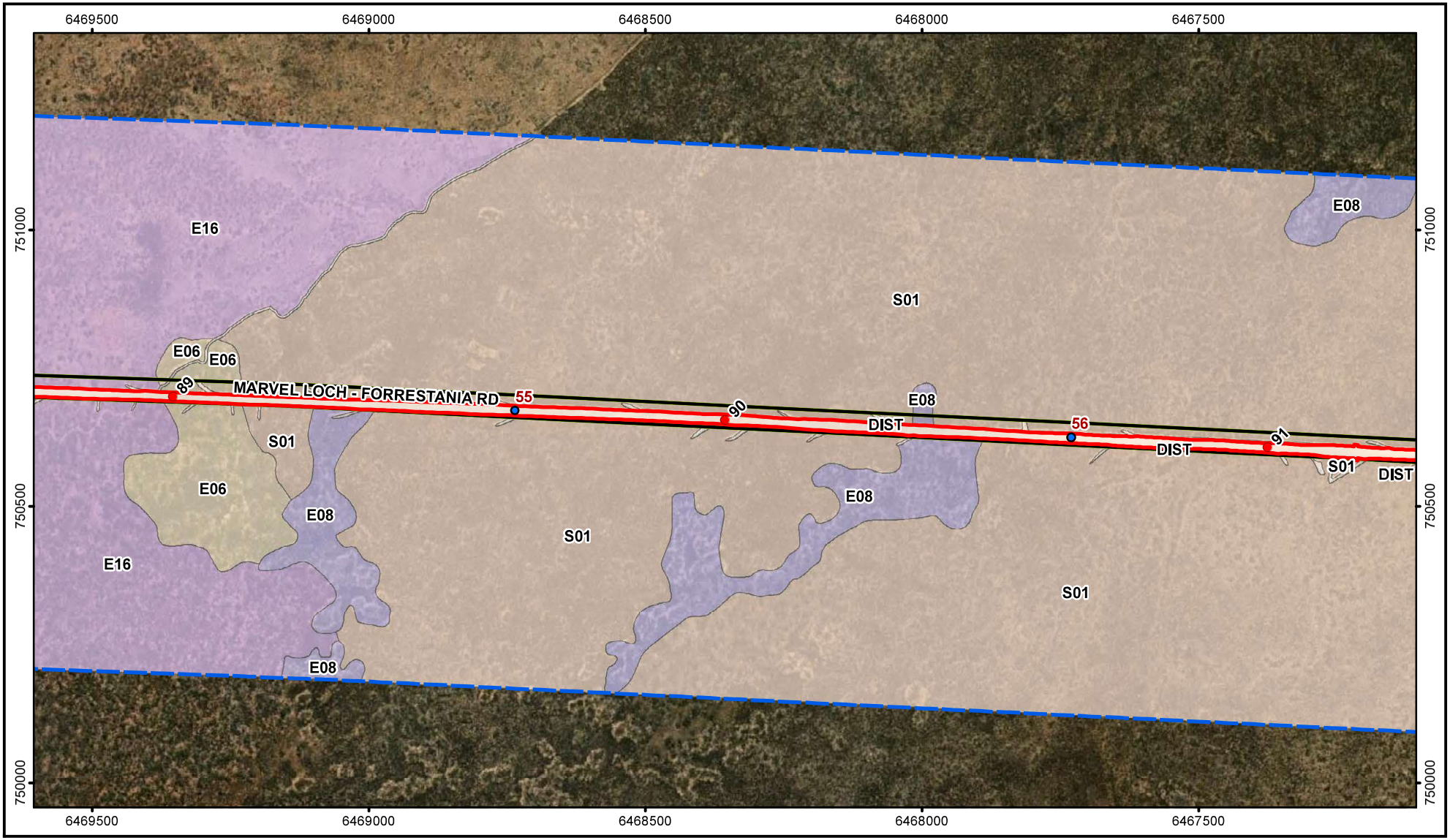
Veg Code
- DIST
- E06
- E08
- E16
- E18
- E22
- E48
- S01

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 89 km to 91 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

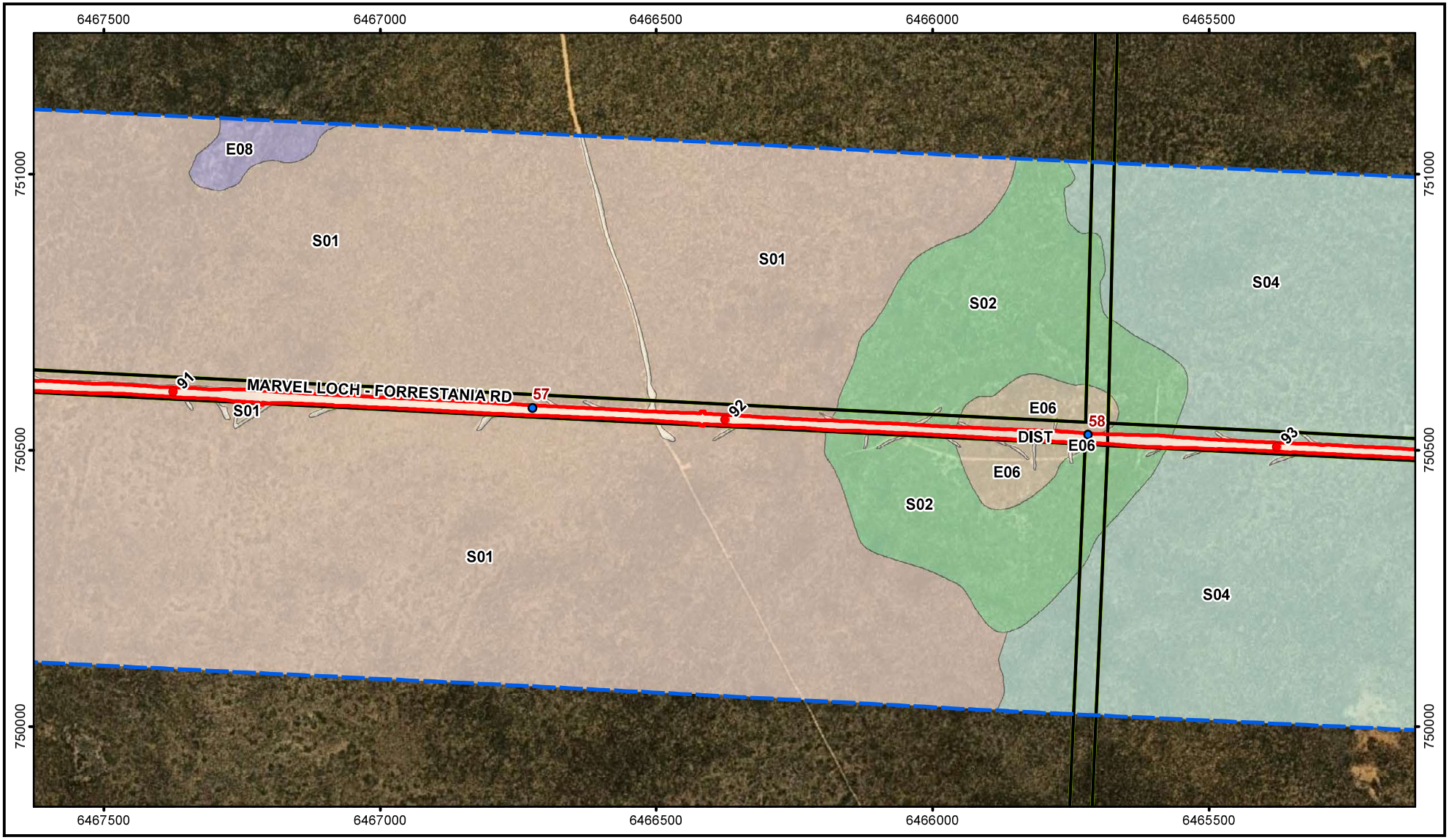
Veg Code: E06, E16, DIST, E08, S01

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 91 km to 93 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

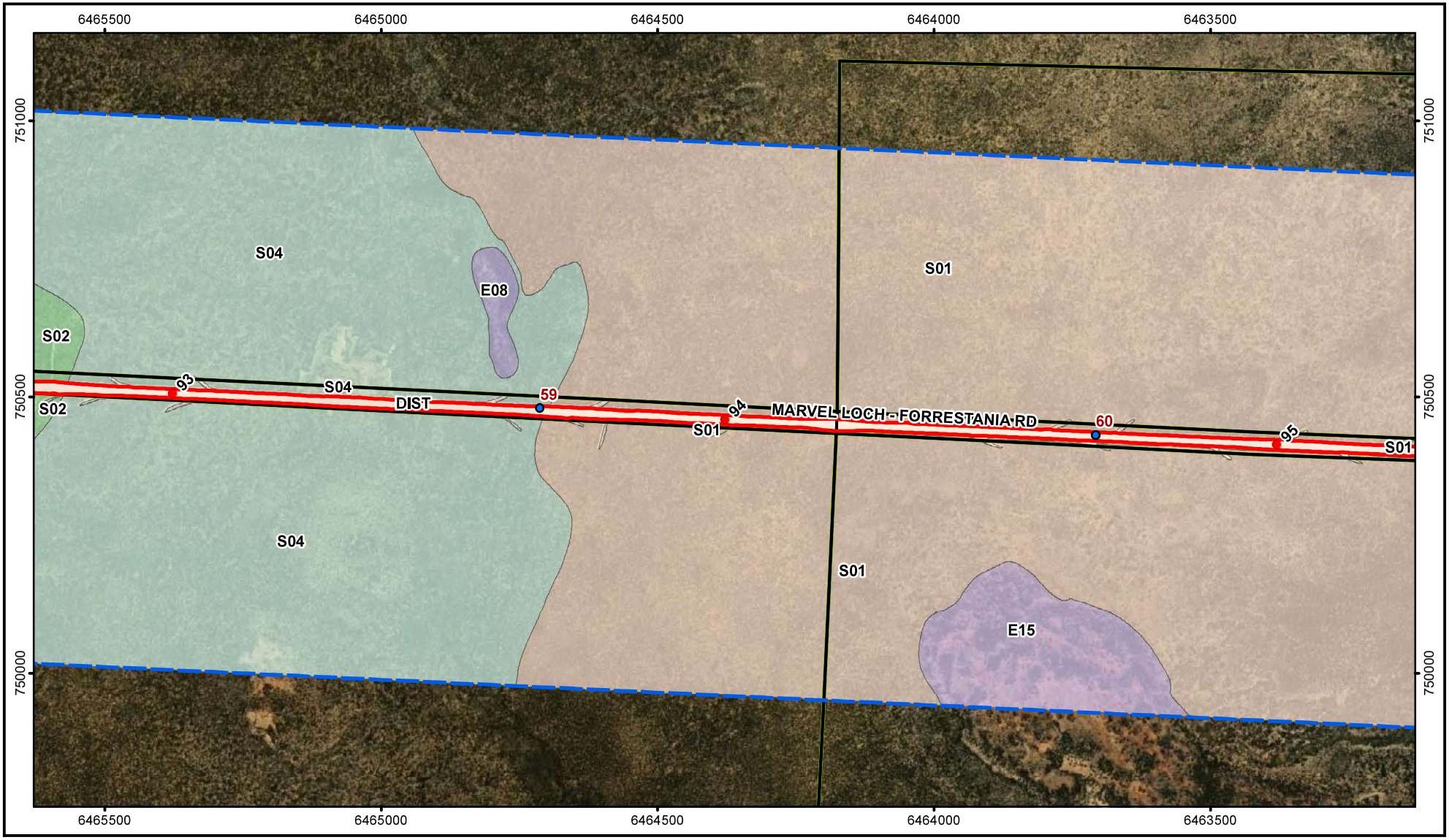
Veg Code: E06, S01, DIST, E08, S02, S04

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 93 km to 95 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

Veg Code

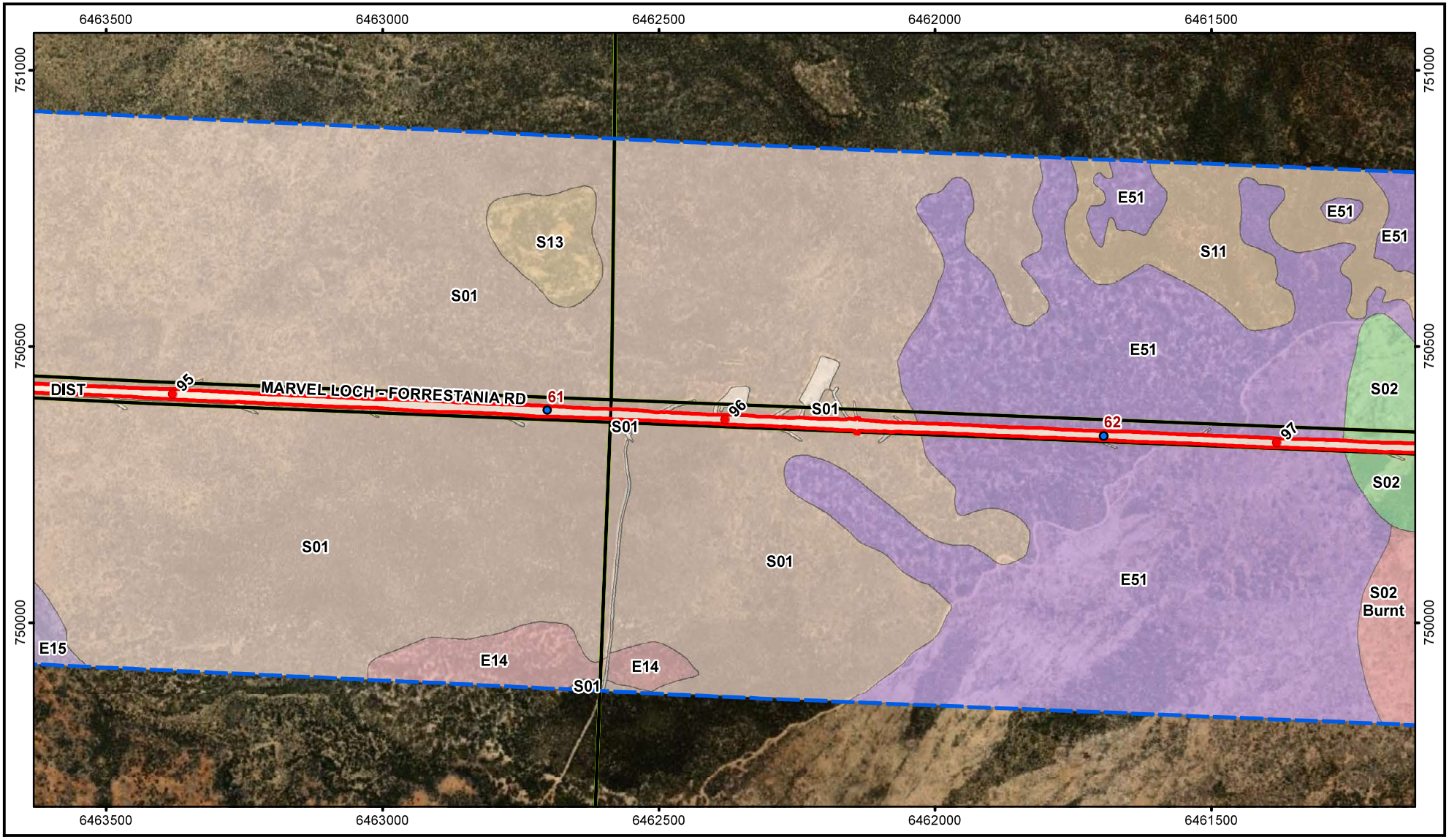
- DIST
- E08
- E15
- S01
- S02
- S04

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 95 km to 97 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

Veg Code

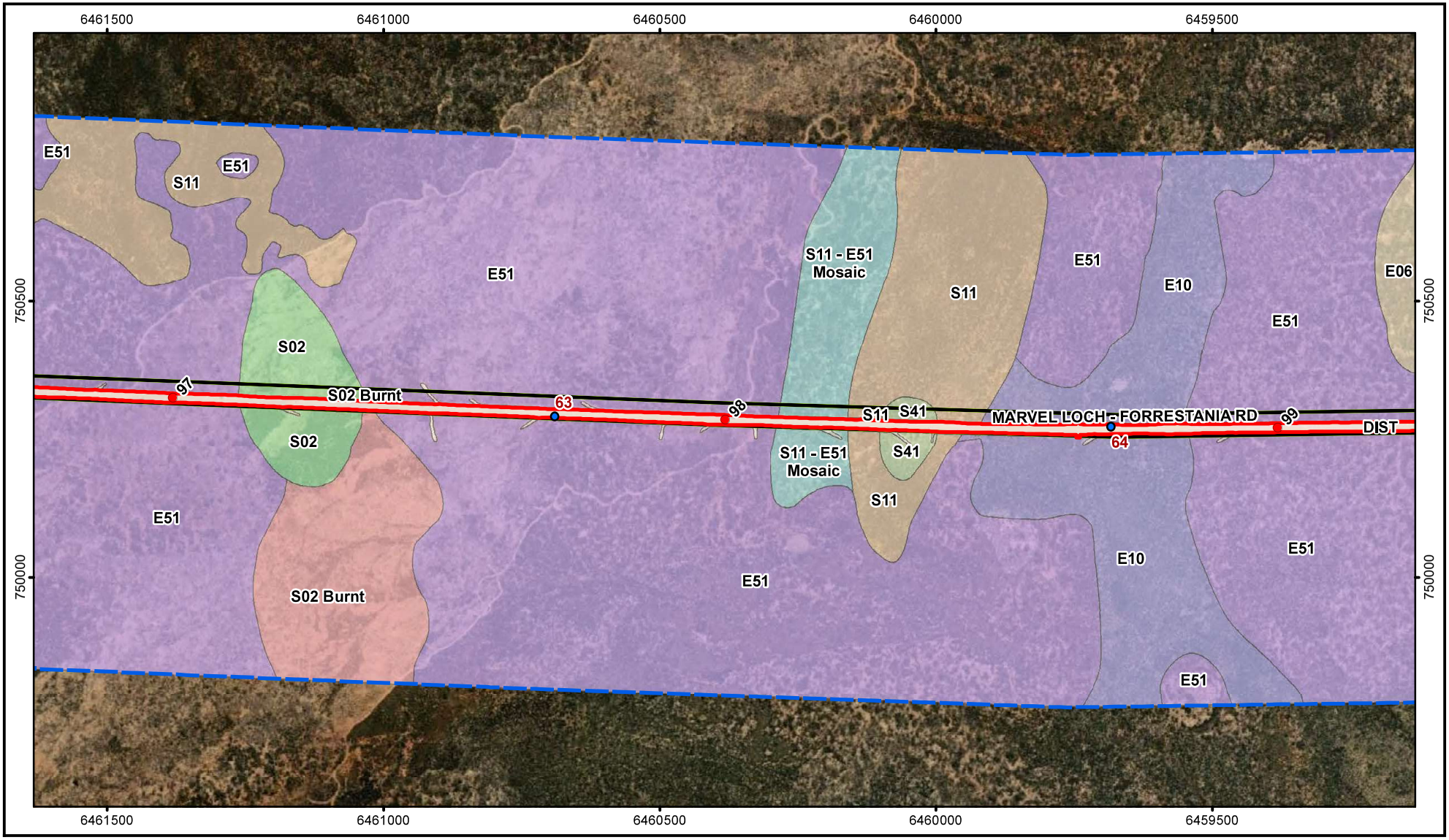
- DIST
- E14
- E15
- E51
- S01
- S02
- S02 Burnt
- S11
- S13

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 97 km to 99 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

Veg Code

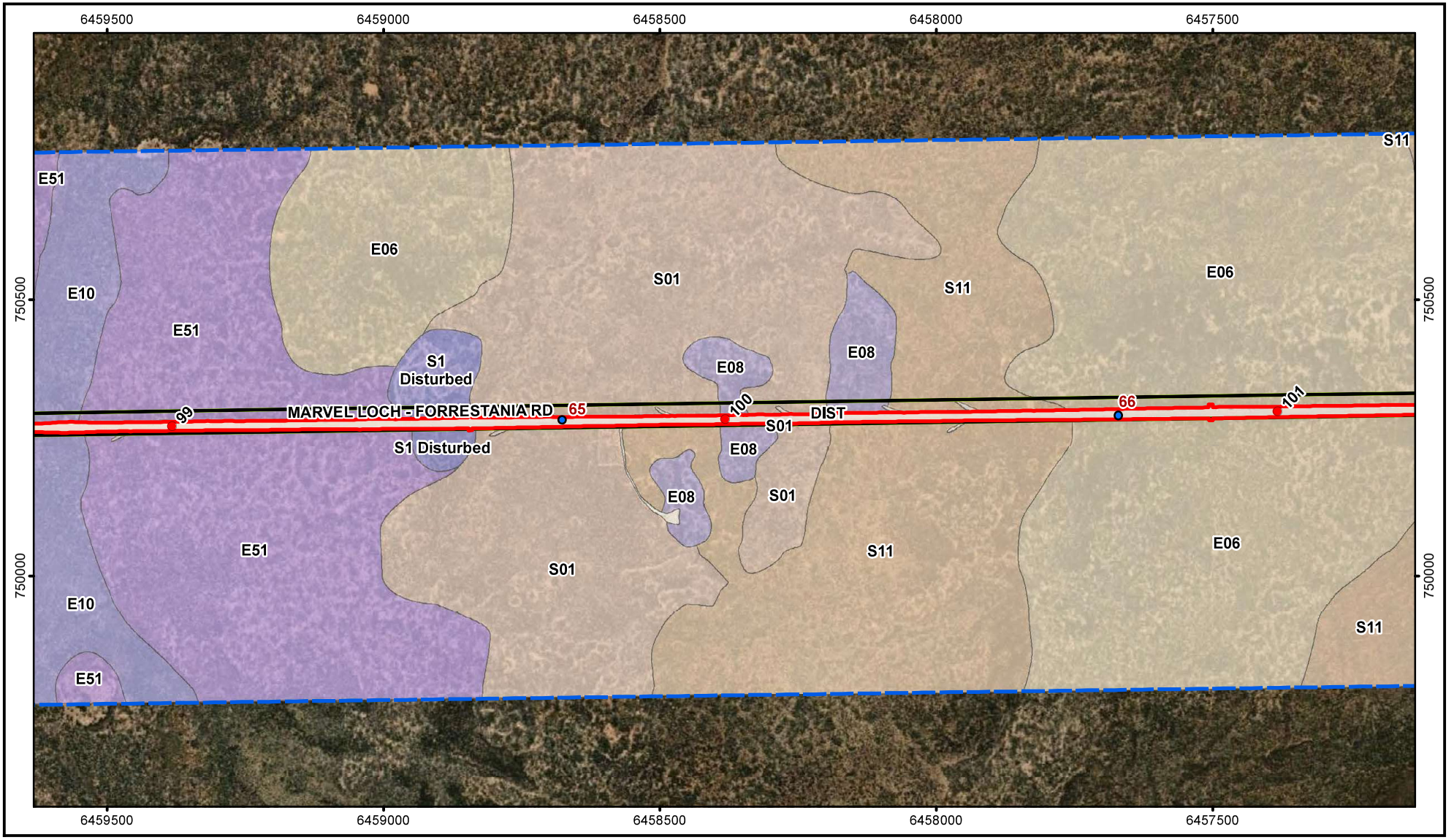
- DIST
- E06
- E10
- E51
- S02
- S02 Burnt
- S11
- S11 - E51 Mosaic
- S41

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 99 km to 101 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

Veg Code

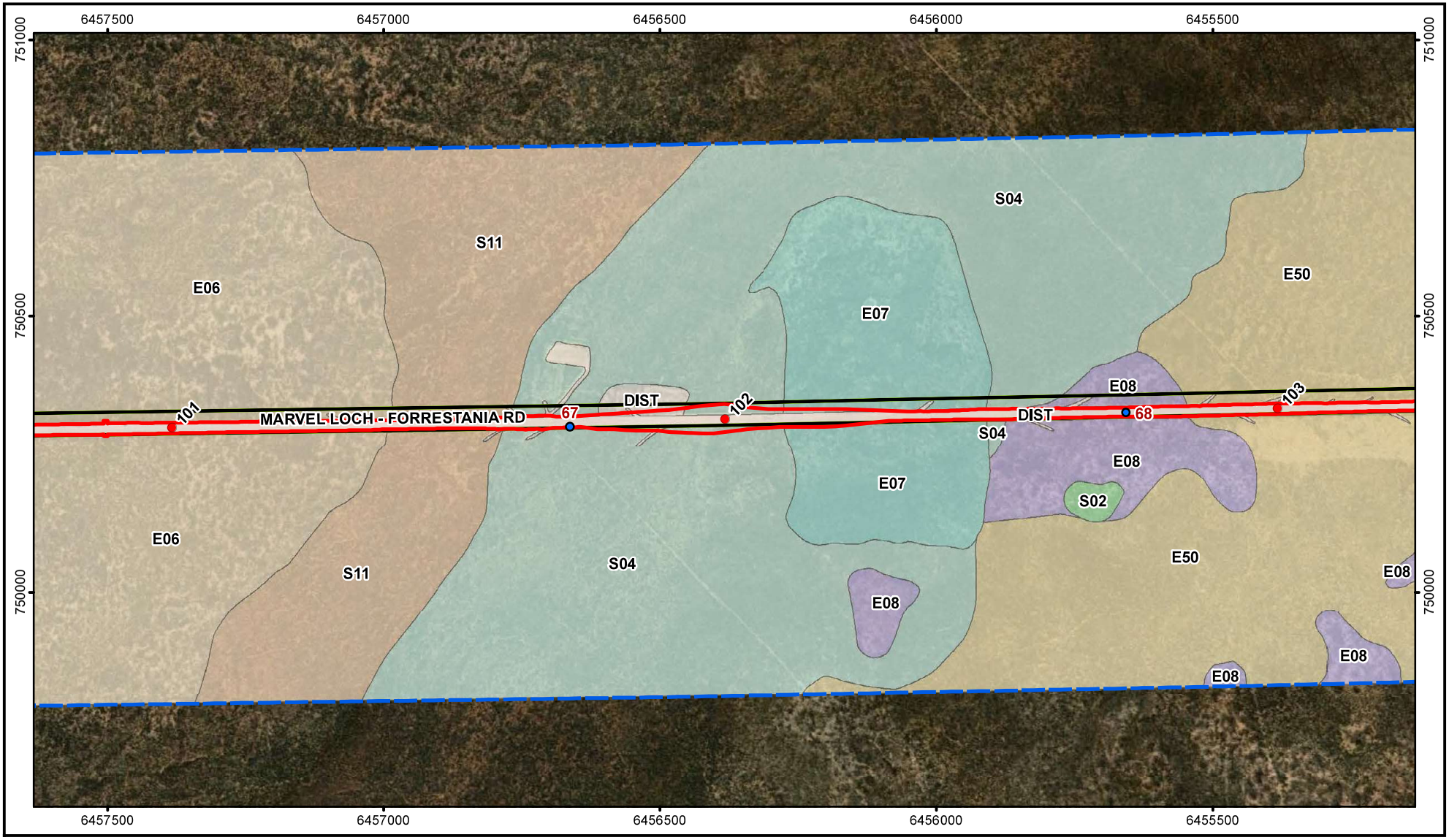
- DIST
- E06
- E08
- E10
- E51
- S01
- S1 Disturbed
- S11

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 101 km to 103 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

Veg Code

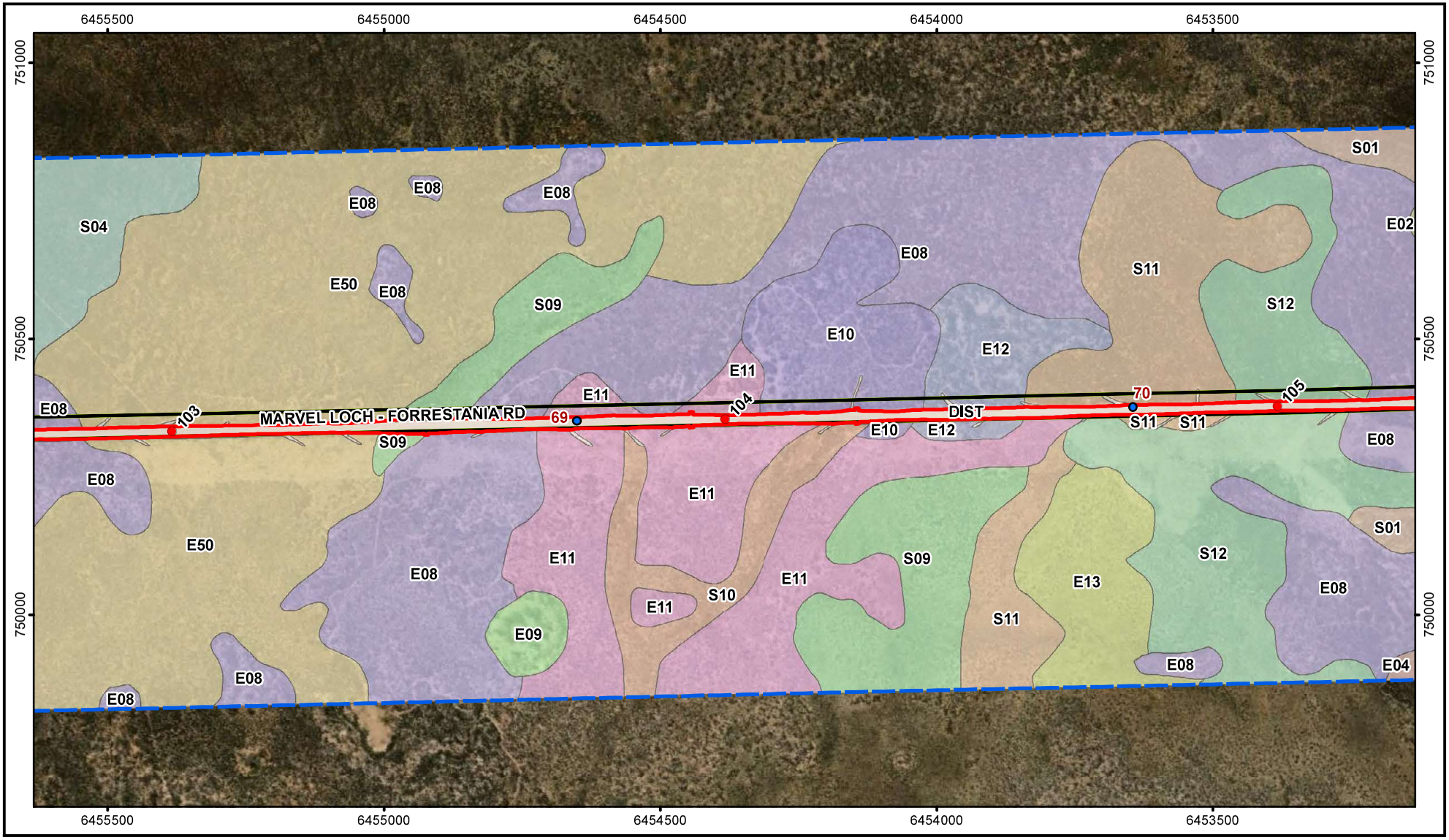
- DIST
- E06
- E07
- E08
- E50
- S02
- S04
- S11

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 103 km to 105 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

Veg Code

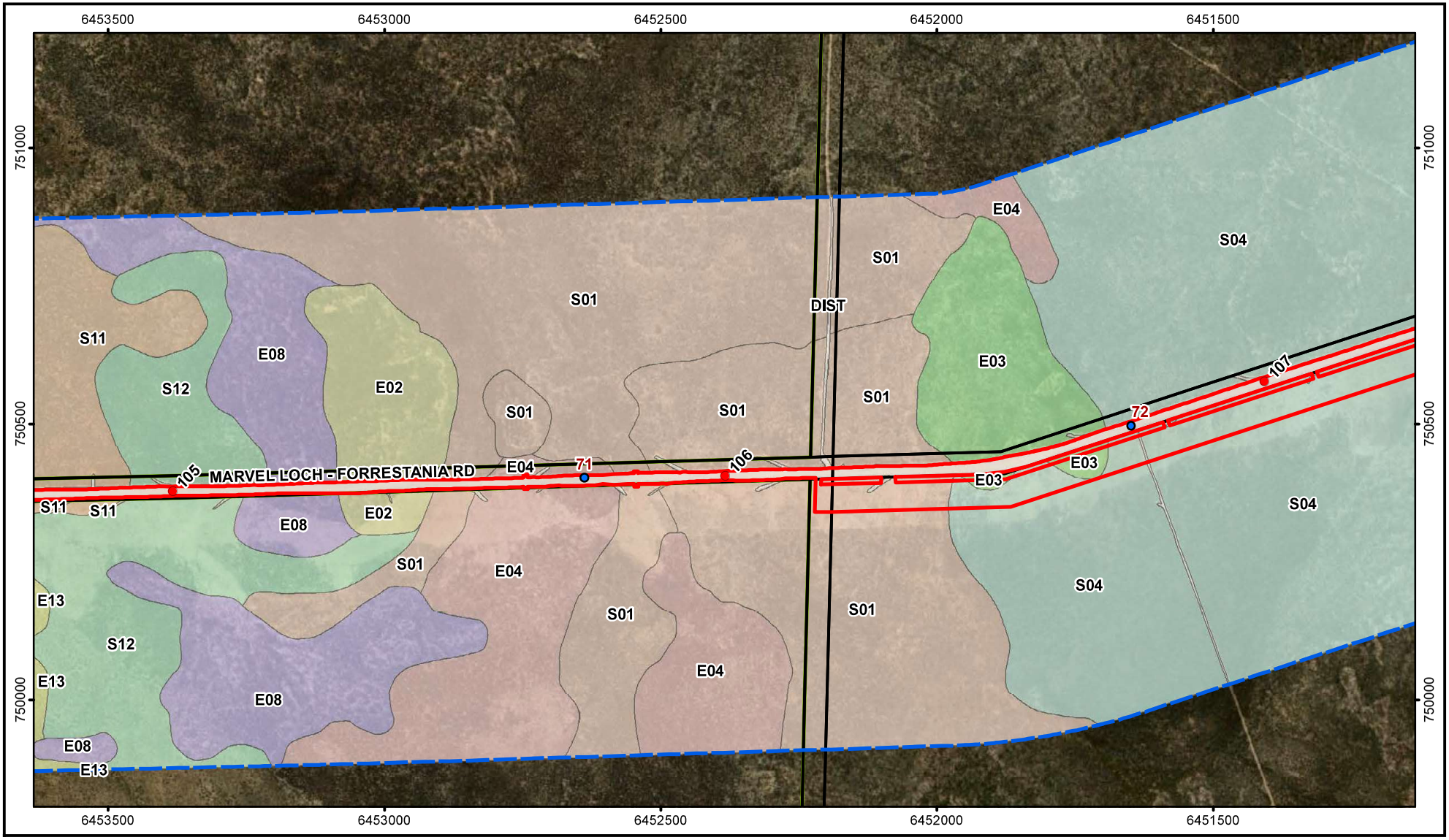
DIST, E02, E04, E08, E09, E10, E11, E12, E13, E50, S01, S04, S09, S10, S11, S12

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 105 km to 107 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Cadastral Reserves

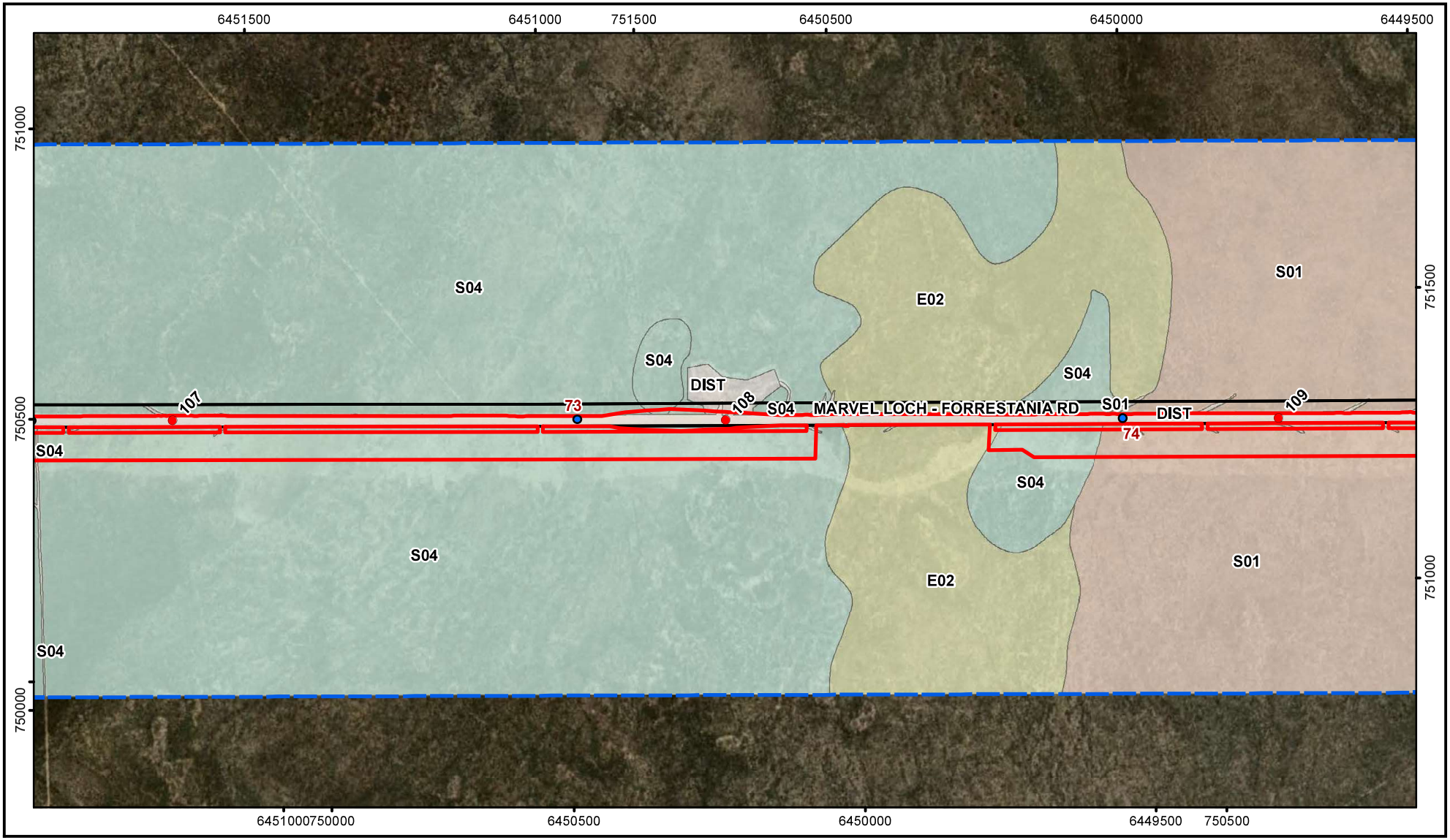
Veg Code
DIST, E02, E03, E04, E08, E13, S01, S04, S11, S12

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 107 km to 109 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

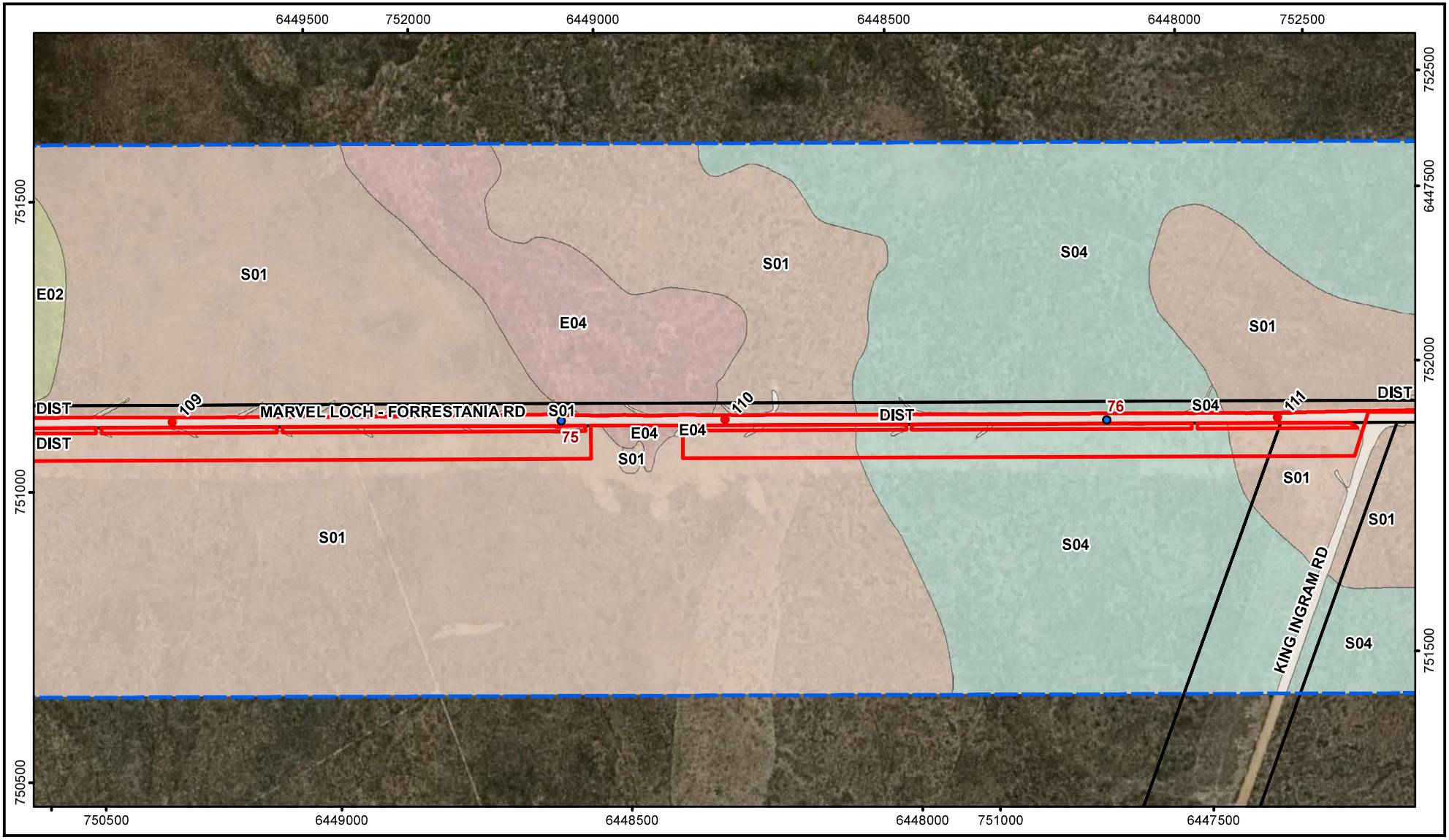
Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- **Veg Code**
- E02
- S04
- DIST
- S01

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 109 km to 111 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry

Veg Code

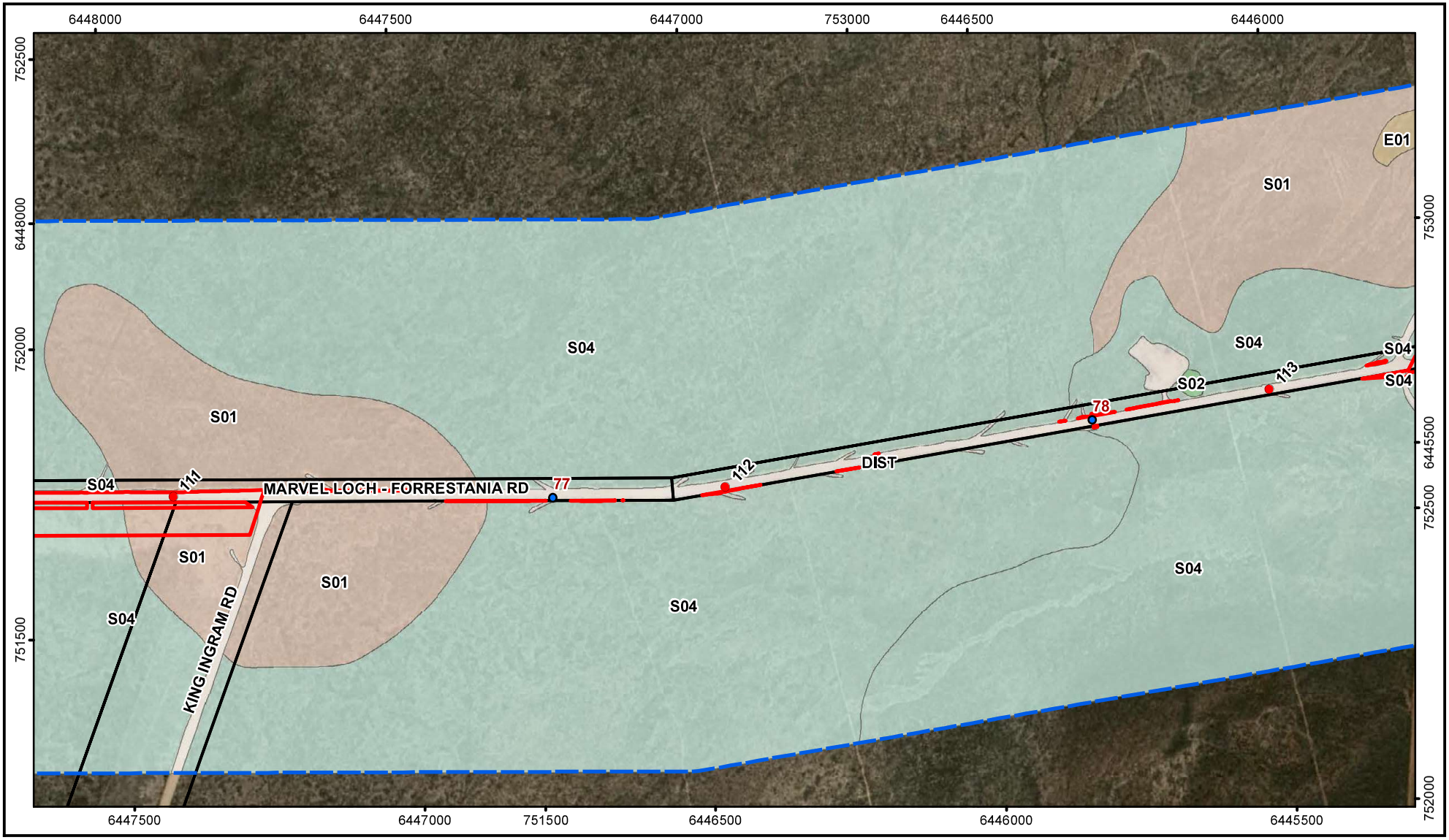
- E02
- S01
- DIST
- E04
- S04

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 111 km to 113 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry

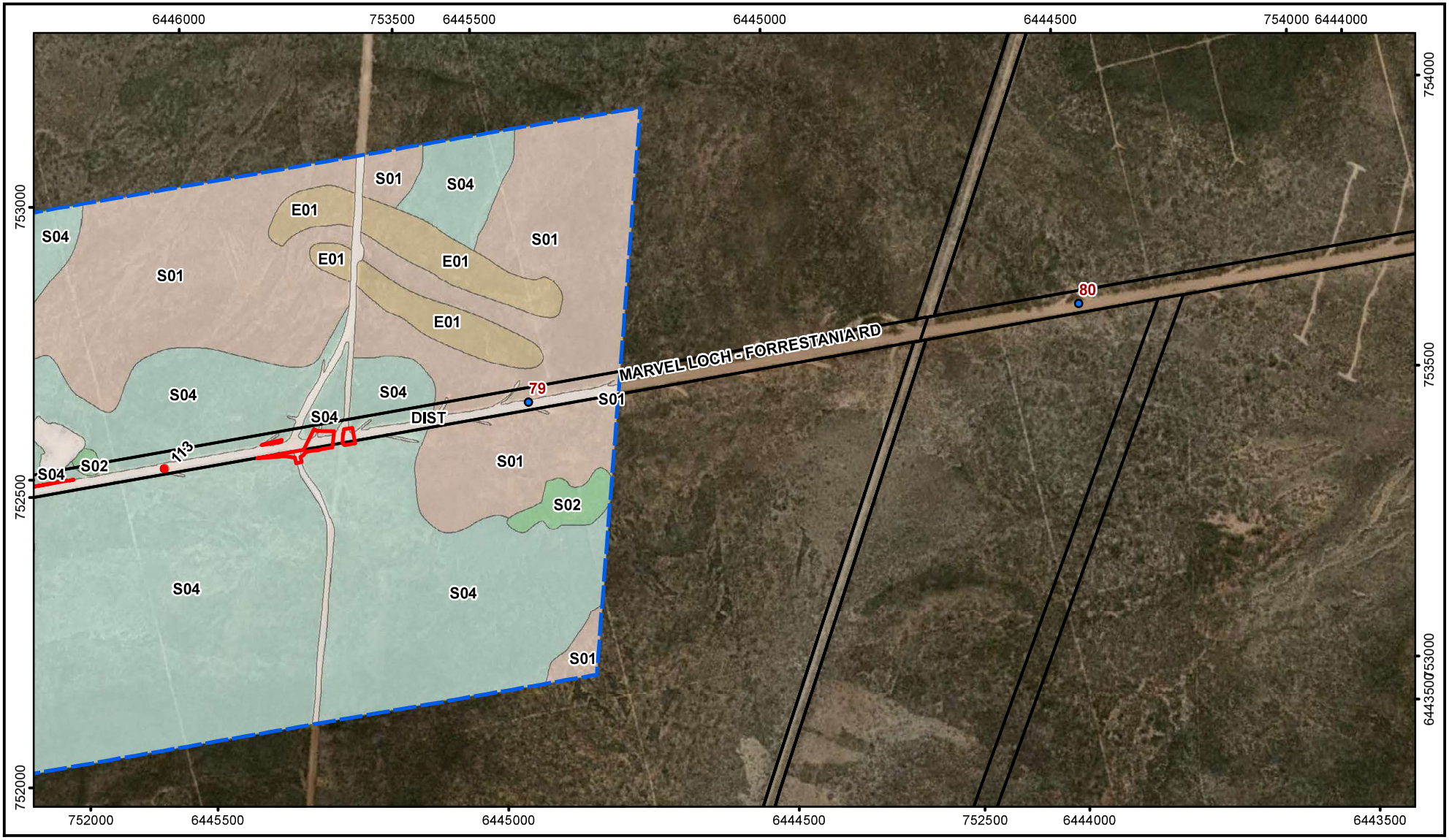
Veg Code
- E01
- S01
- S02
- S04
- DIST

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 113 km to 115 km - Vegetation

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_02_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
Total areas within CPS 10049/1 - Cleared Land 88.86 ha, Land to be Cleared 30.57 ha
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- CPS 10049/1
- Survey Limit
- Cadasta Bdry
- Veg Code
- DIST
- E01
- S01
- S02
- S04

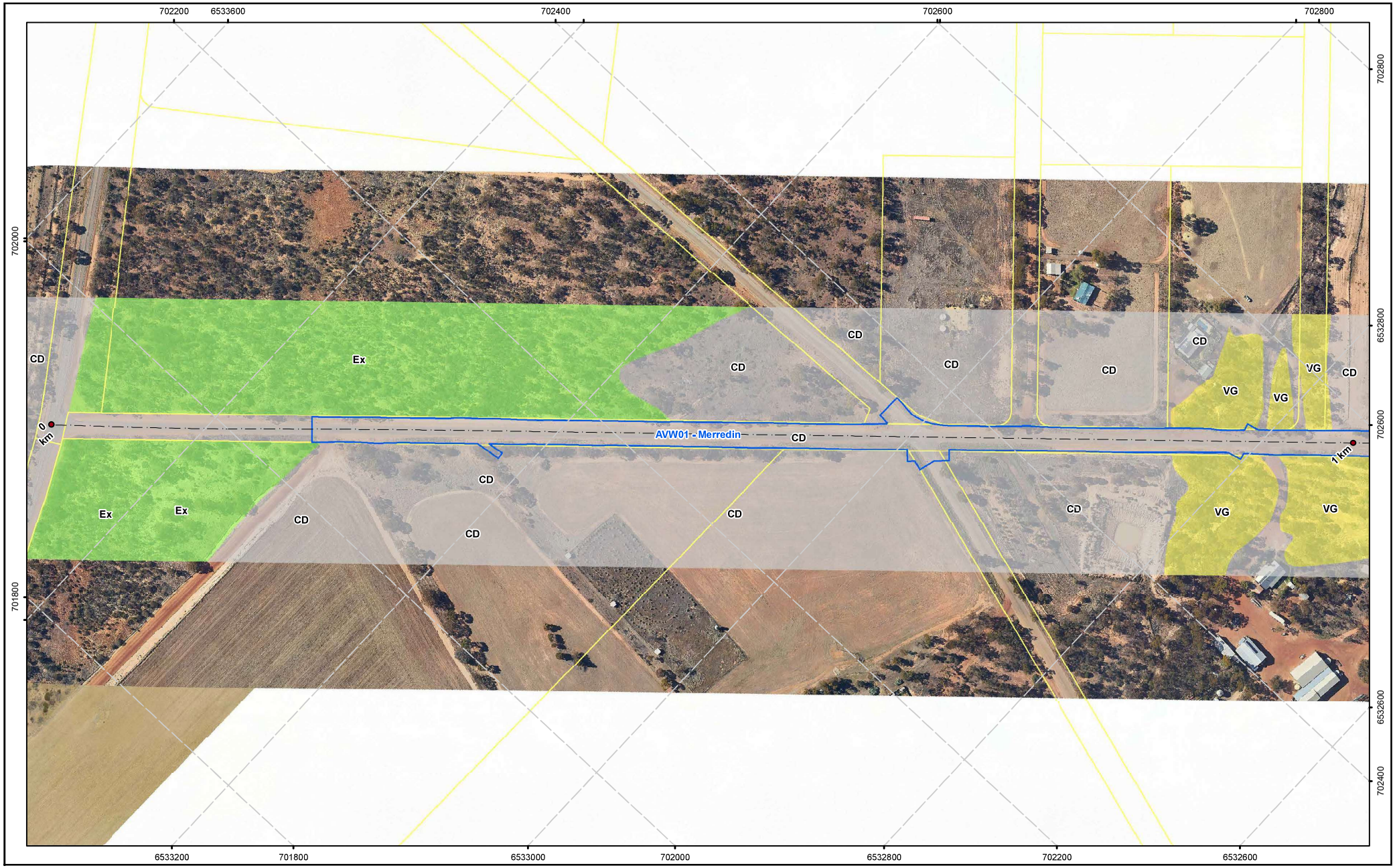
0 0.2 km

N

Appendix 6. Vegetation Condition Maps of the Study Area

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 0km to Chn 1km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

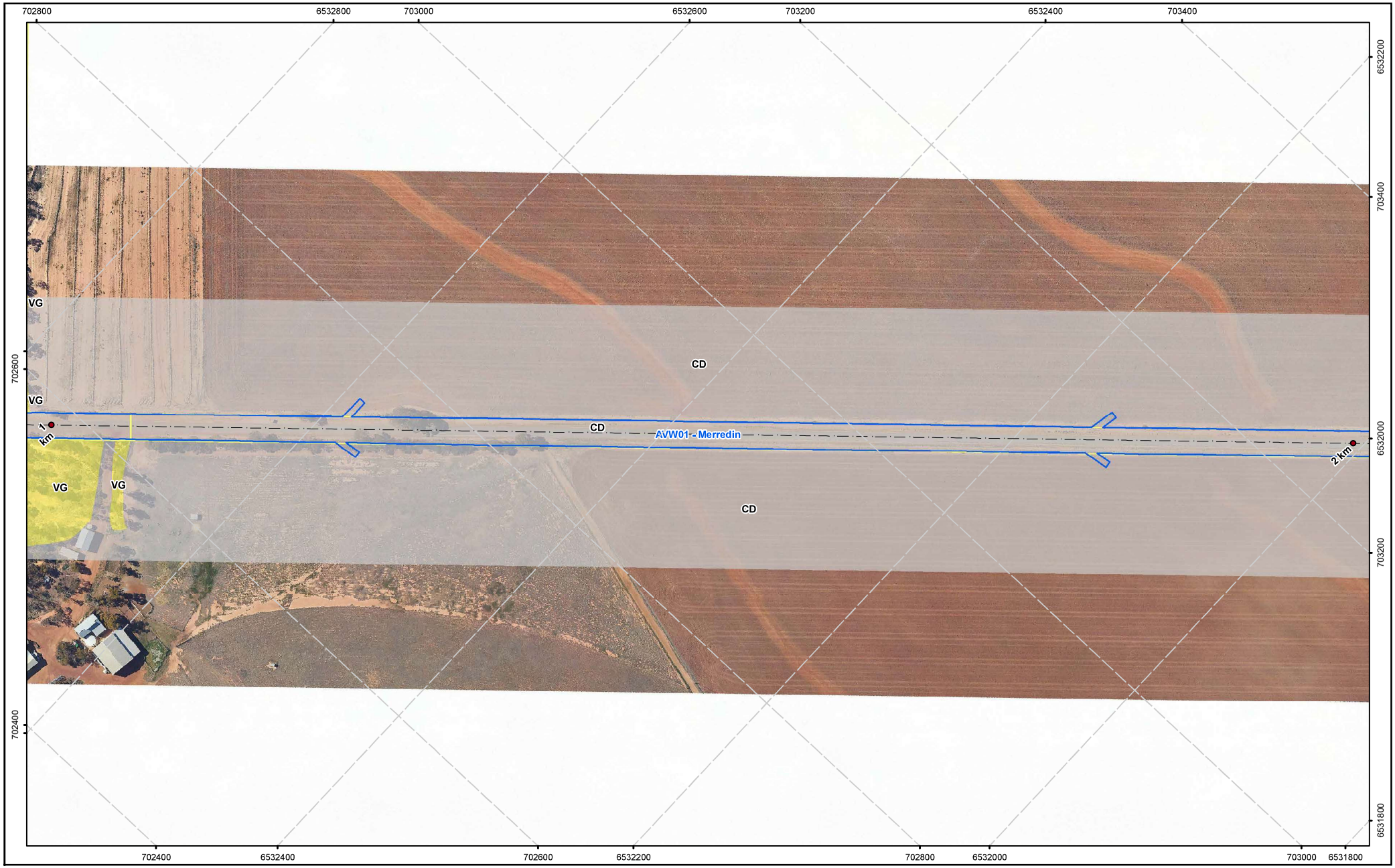
Legend
- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Ex - Excellent
- Biogeographic Region
- Cadastre
- VG - Very Good

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 0km to Chn 1km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 1km to Chn 2km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

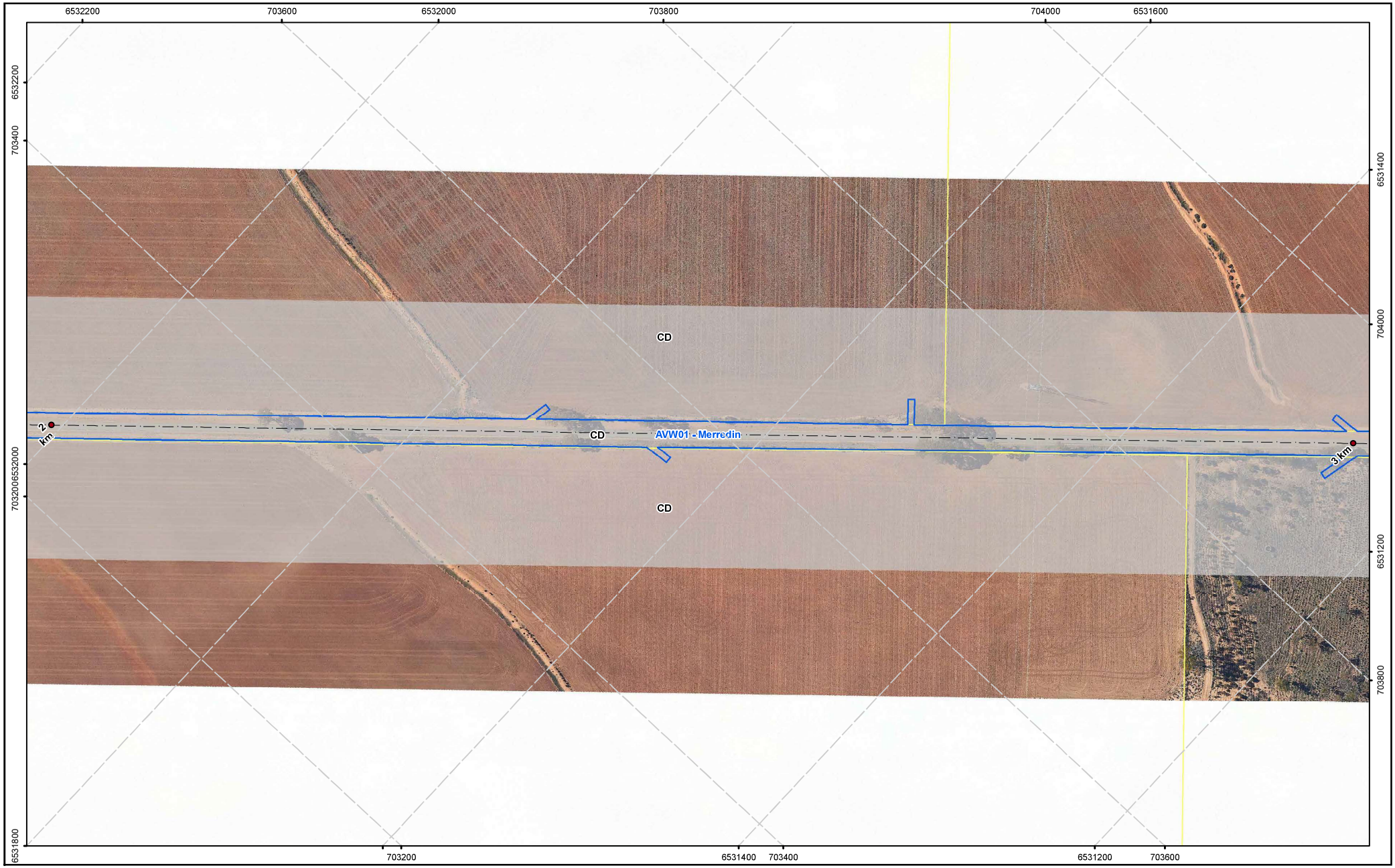
Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
VG - Very Good
Biogeographic Region
Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 1km to Chn 2km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 2km to Chn 3km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

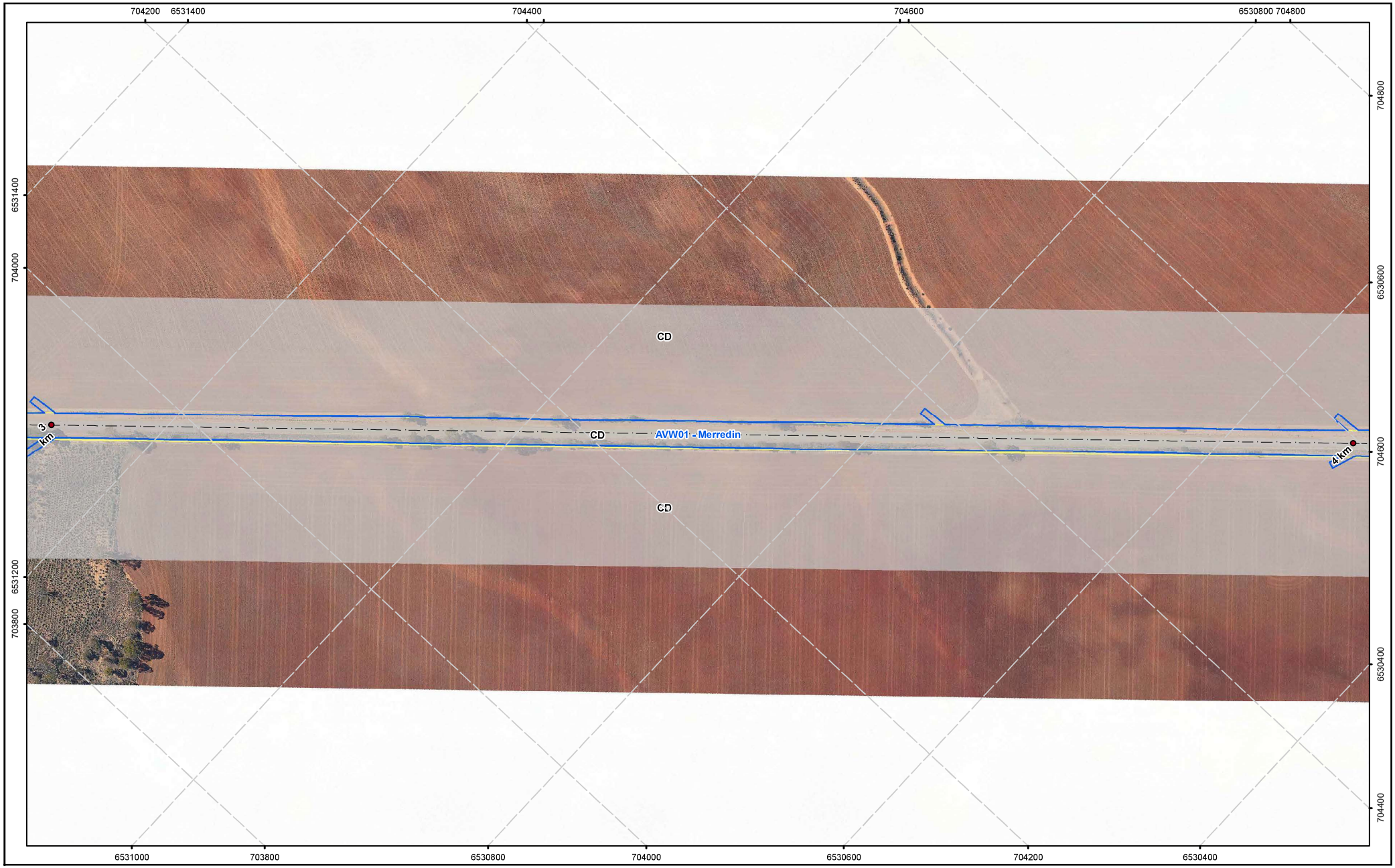
Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Biogeographic Region
Cadastre

0 100 m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 2km to Chn 3km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 3km to Chn 4km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Biogeographic Region
- Cadastre

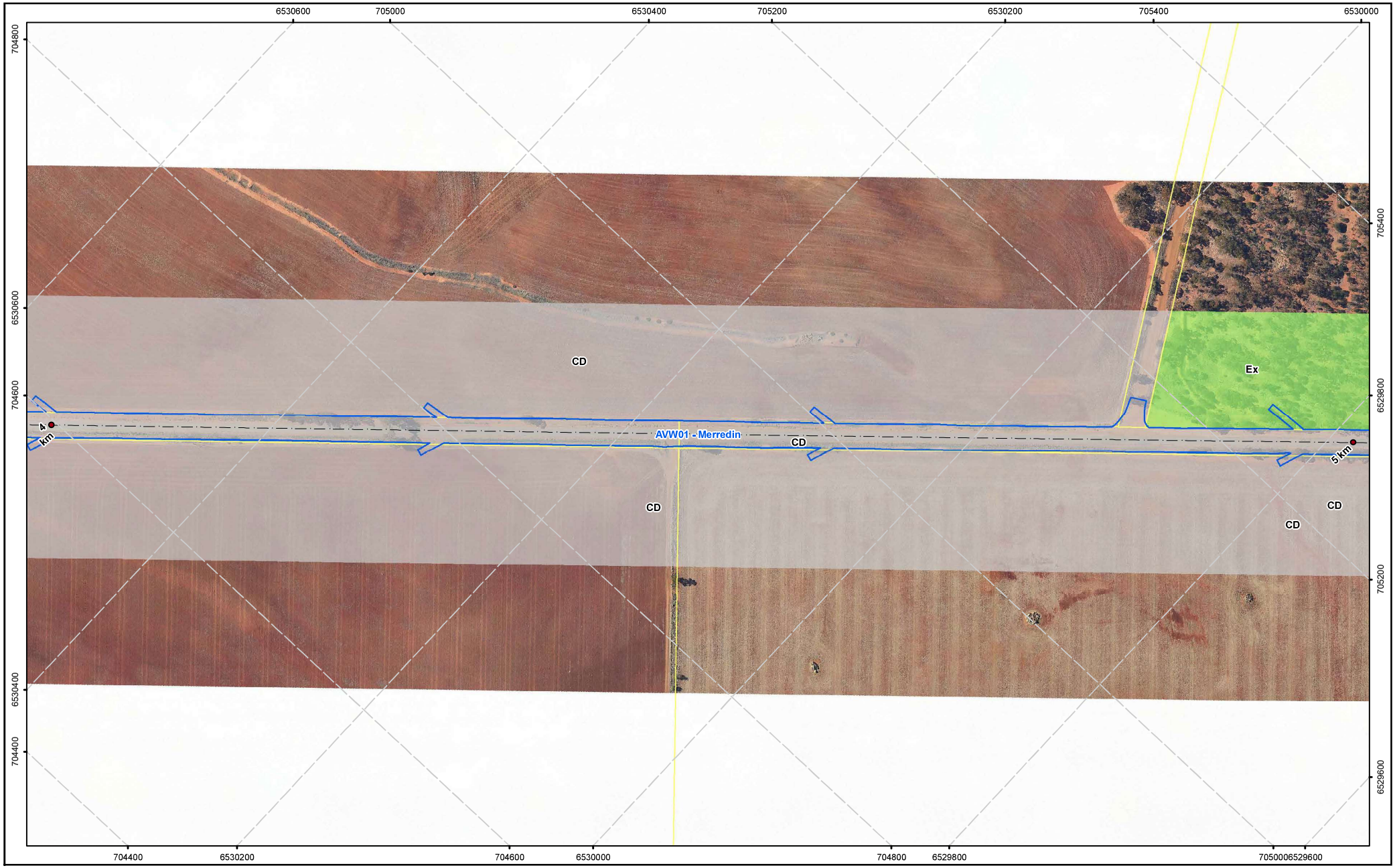
0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 3km to Chn 4km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 4km to Chn 5km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

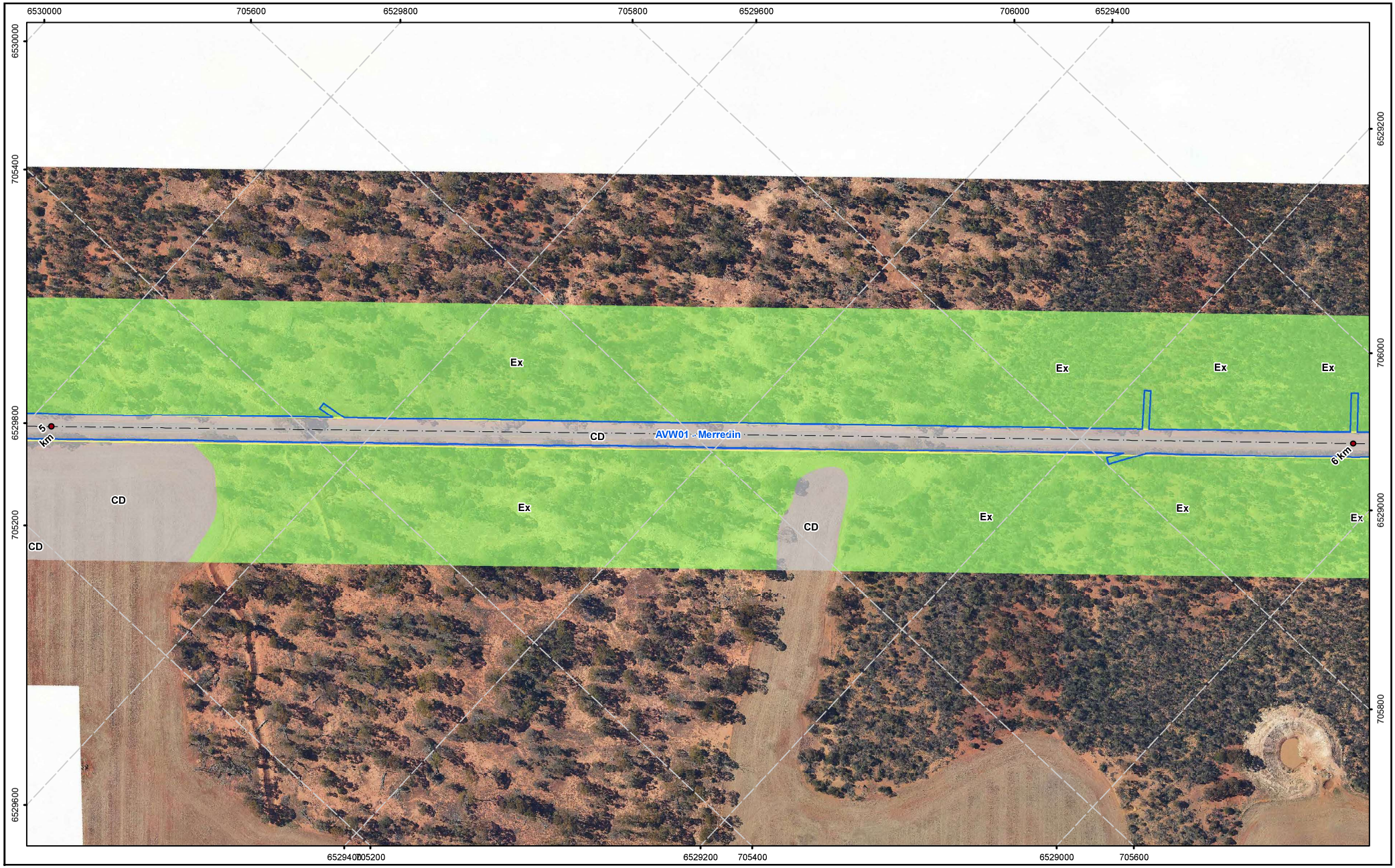
Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Ex - Excellent
Biogeographic Region
Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 4km to Chn 5km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 5km to Chn 6km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

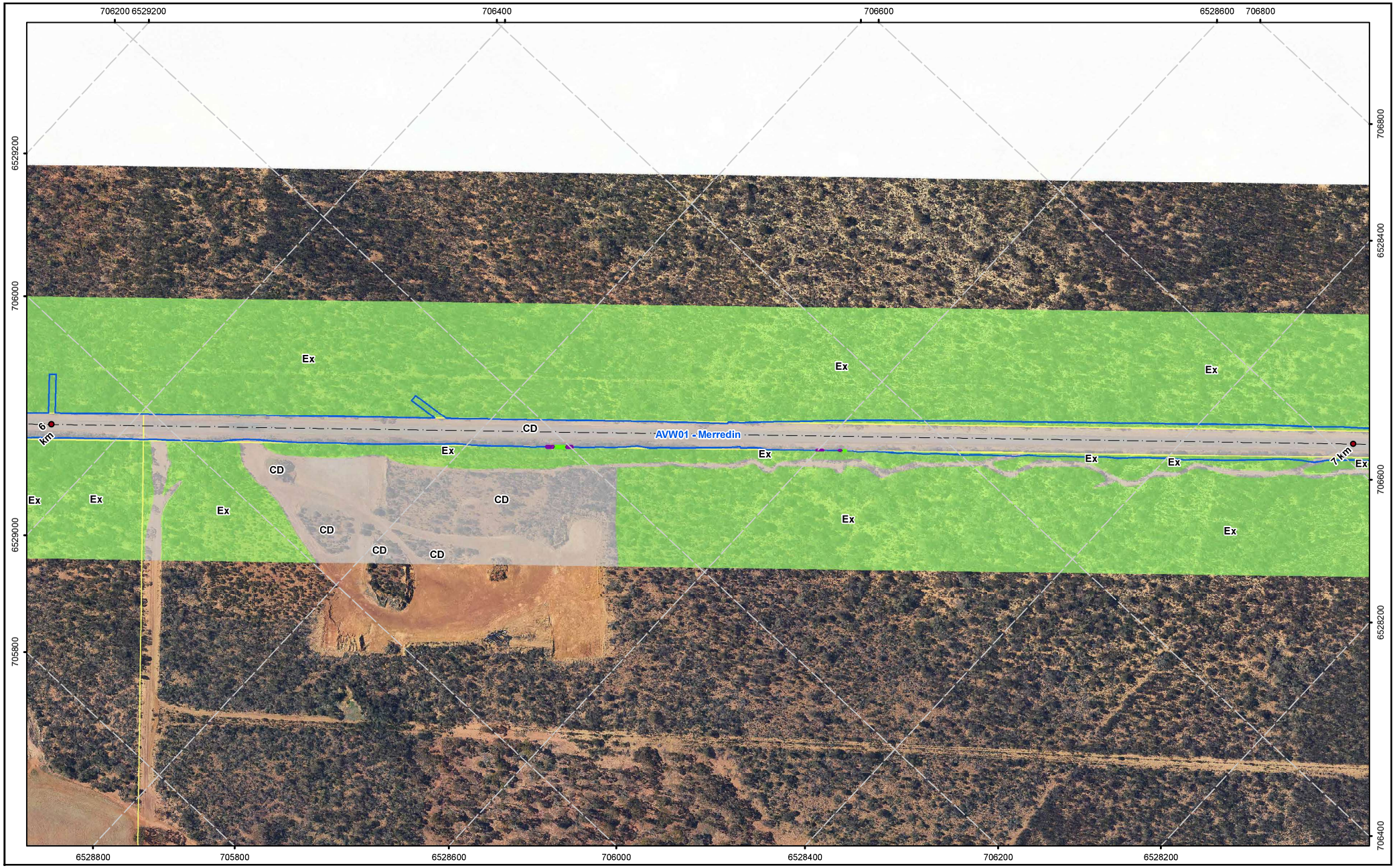
Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Ex - Excellent
Biogeographic Region
Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 5km to Chn 6km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 6km to Chn 7km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Ex - Excellent
- Biogeographic Region
- Other native vegetation clearing footprint
- Cadastre

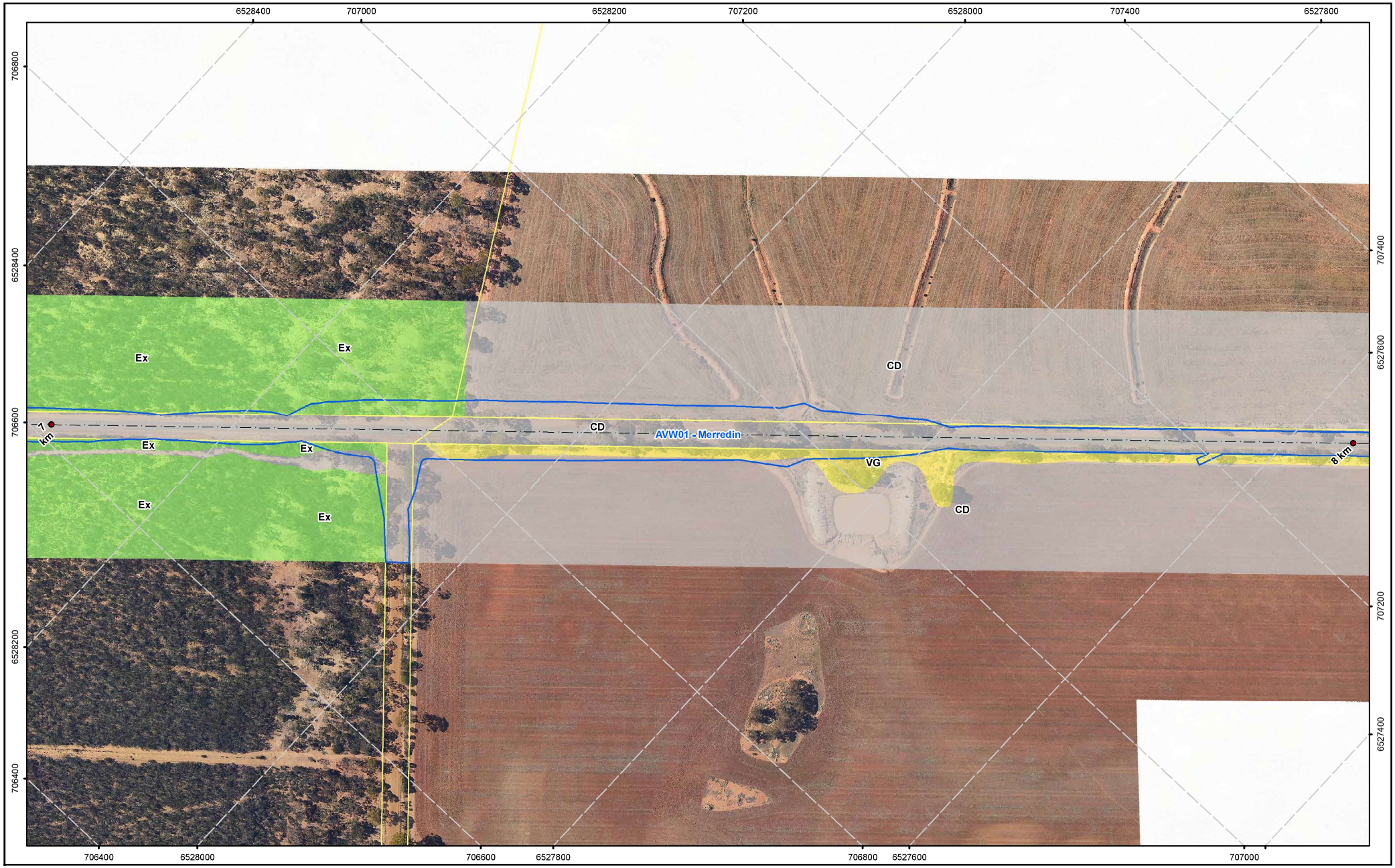
0 100 m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 6km to Chn 7km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 7km to Chn 8km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Ex - Excellent
- Biogeographic Region
- Cadastre
- VG - Very Good

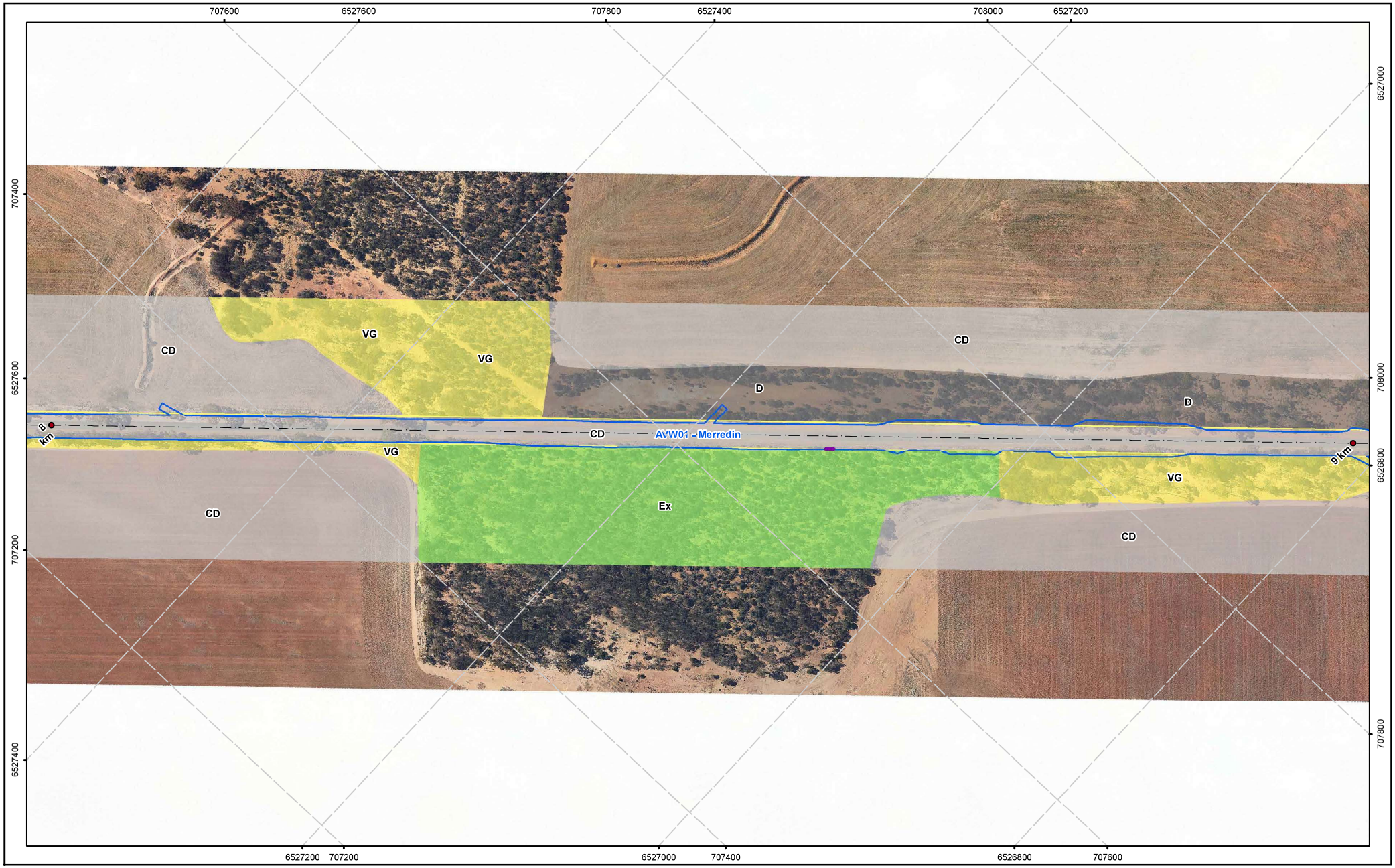
0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 7km to Chn 8km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 8km to Chn 9km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- D - Degraded
- Ex - Excellent

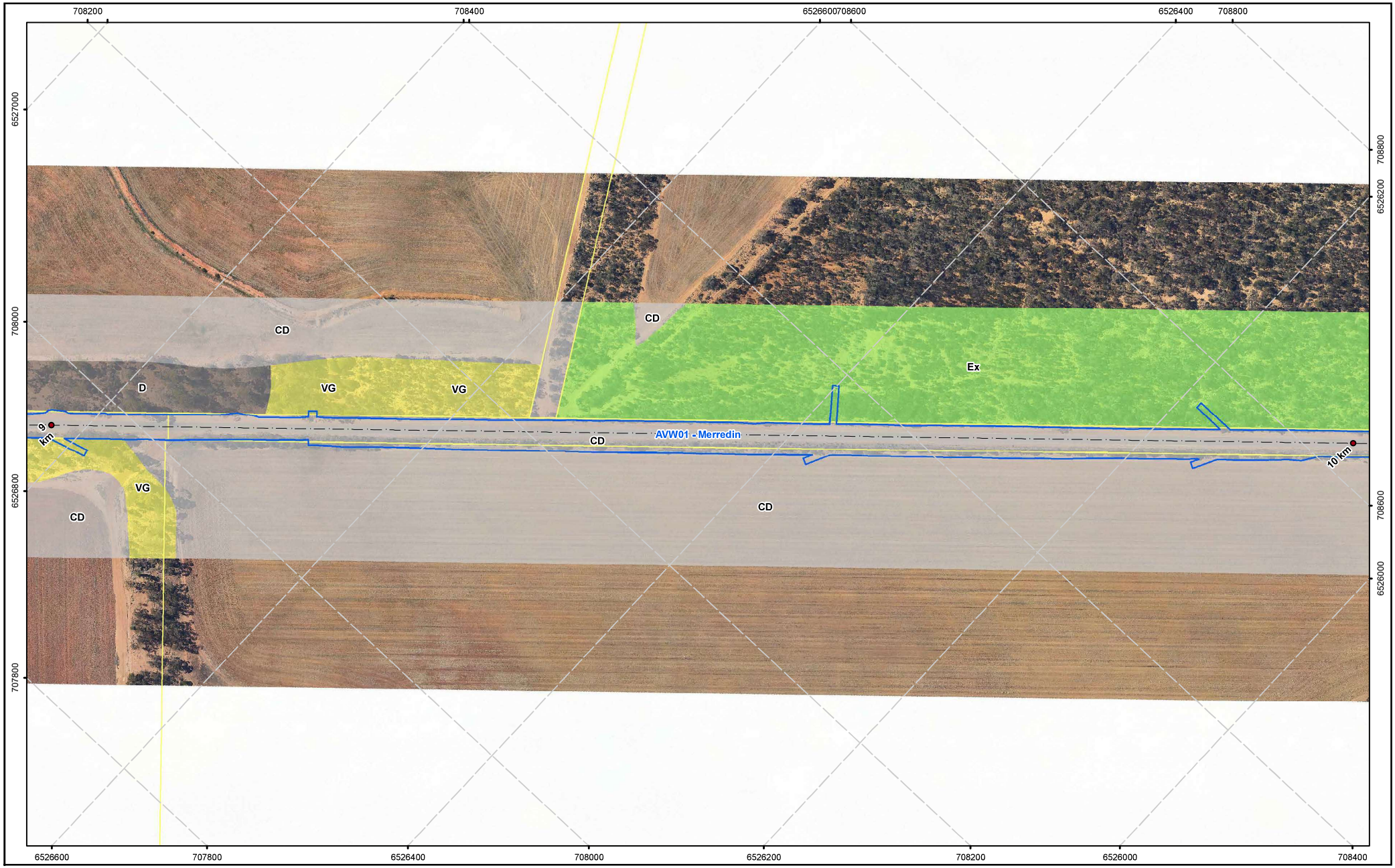
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 8km to Chn 9km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 9km to Chn 10km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- D - Degraded
- Ex - Excellent

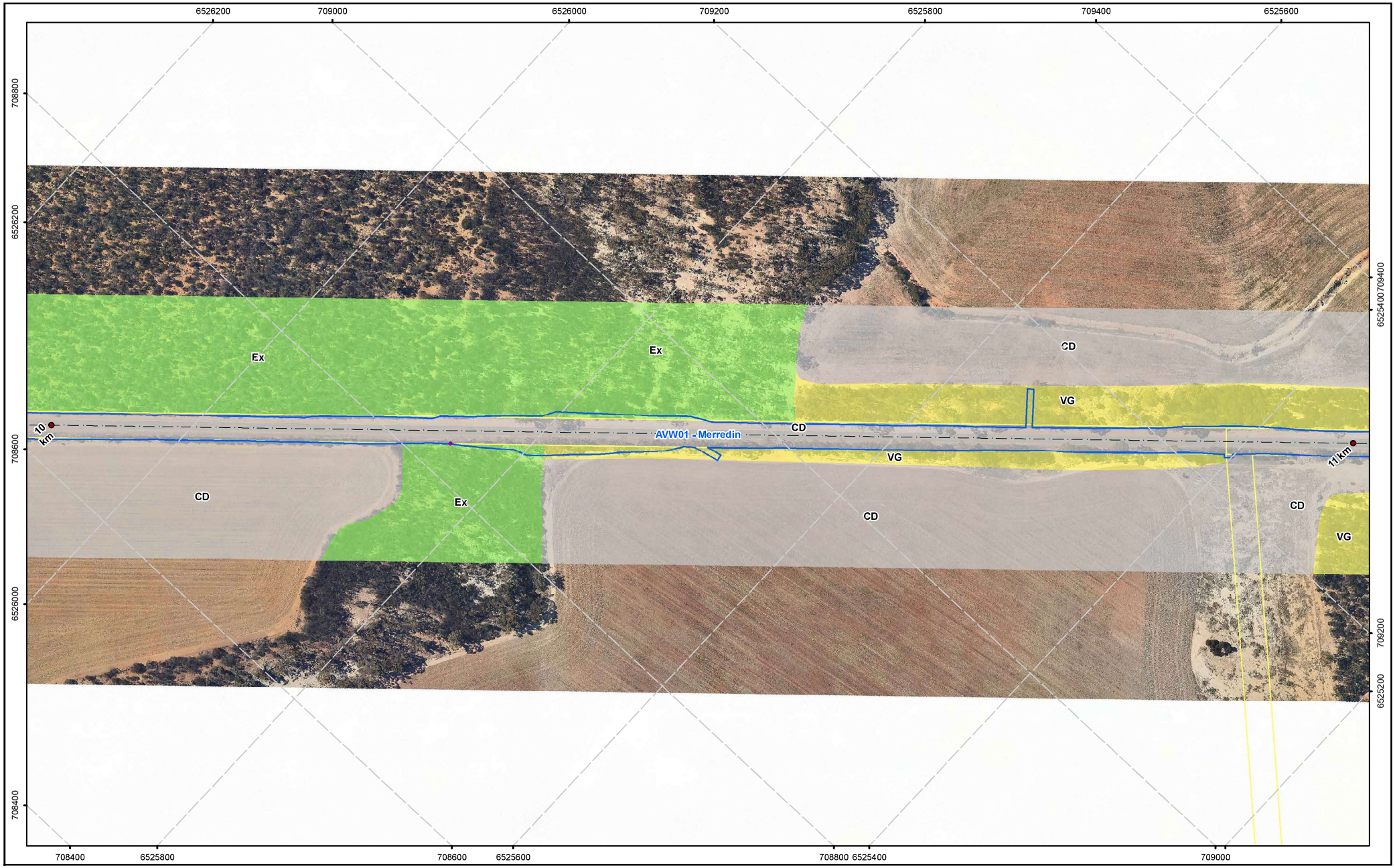
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 9km to Chn 10km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 10km to Chn 11km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Ex - Excellent
- Biogeographic Region
- Cadastre
- VG - Very Good

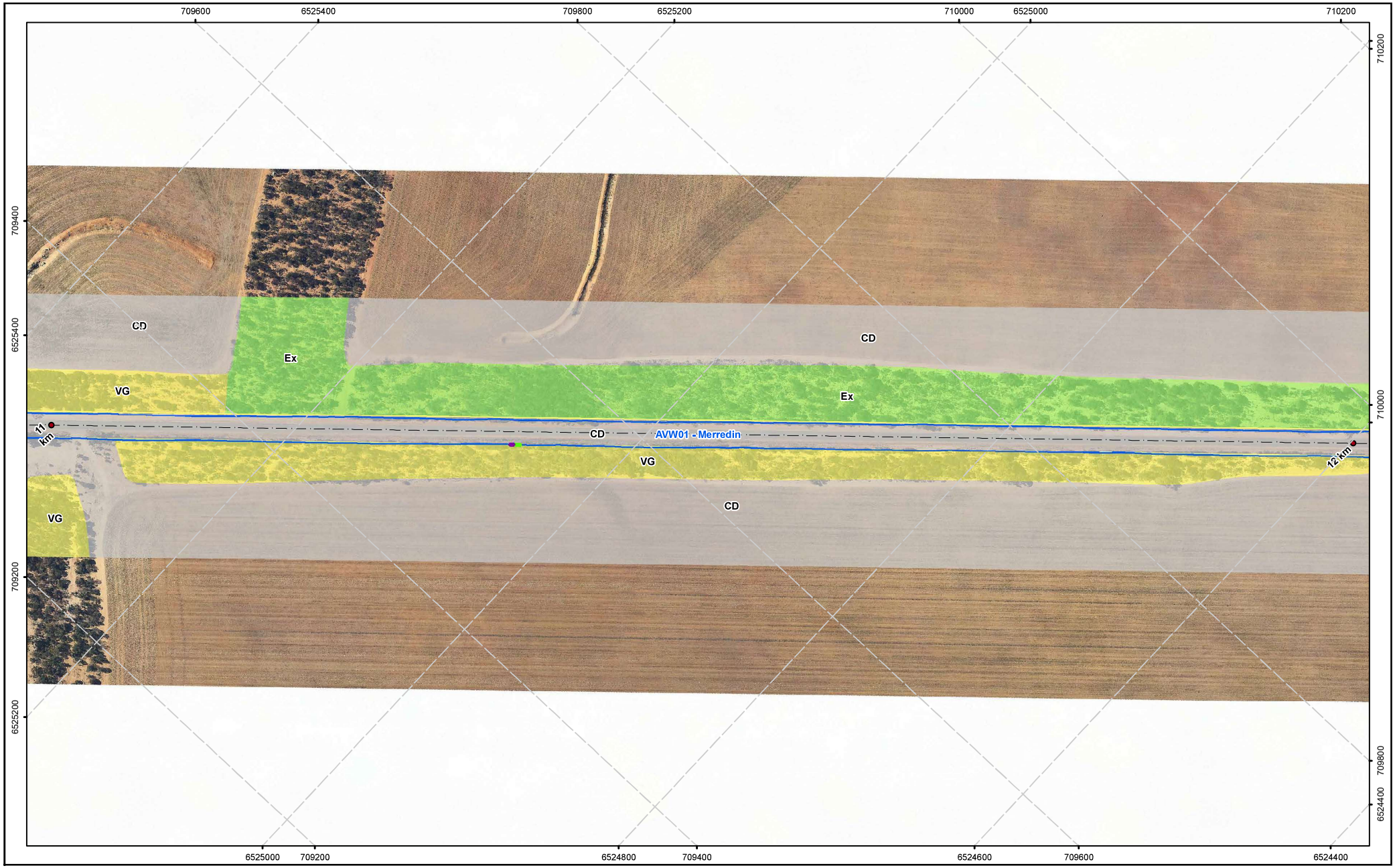
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 10km to Chn 11km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 11km to Chn 12km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Ex - Excellent
- Biogeographic Region
- Other native vegetation clearing footprint
- Cadastre
- VG - Very Good

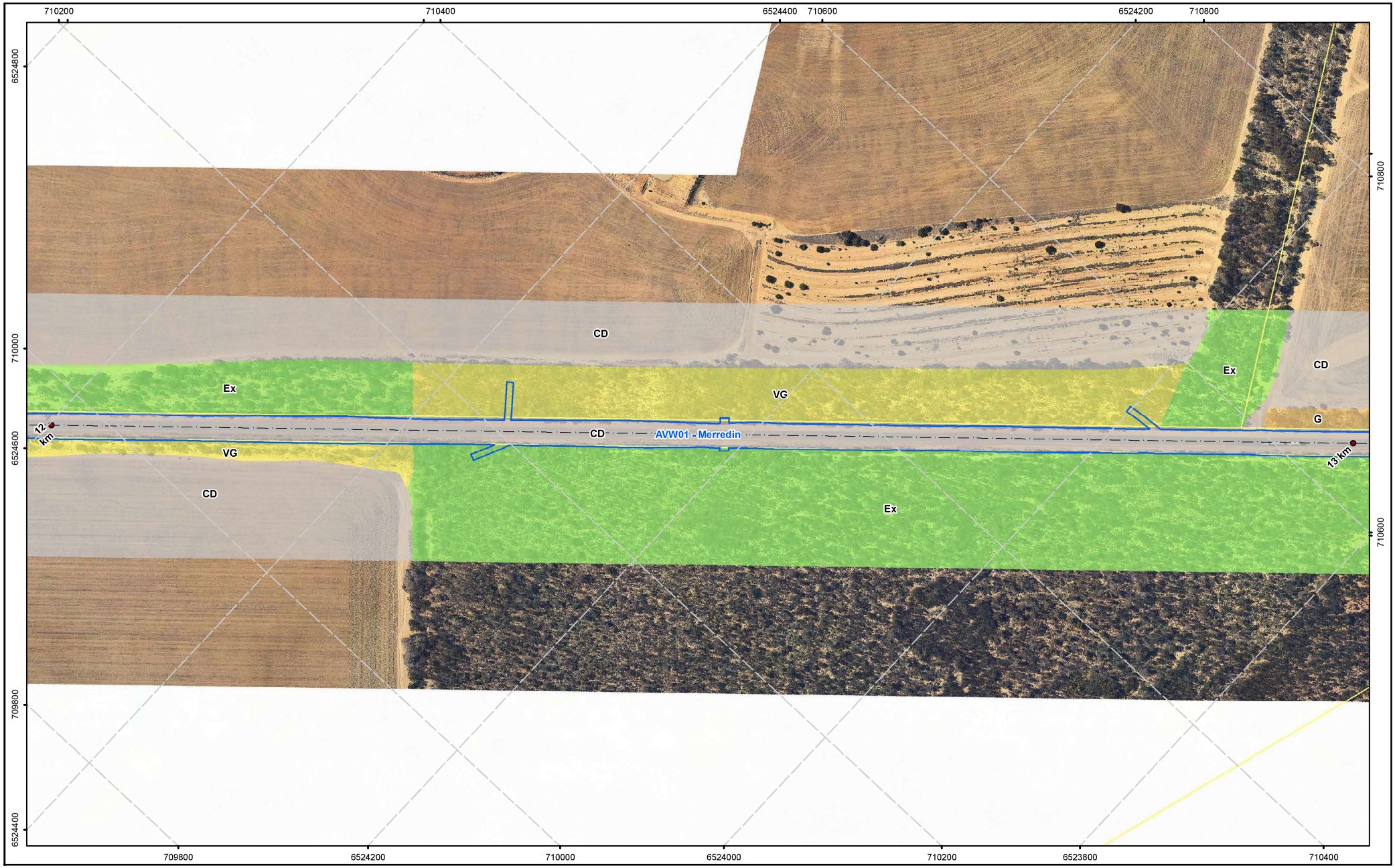
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 11km to Chn 12km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 12km to Chn 13km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- G - Good
- Ex - Excellent

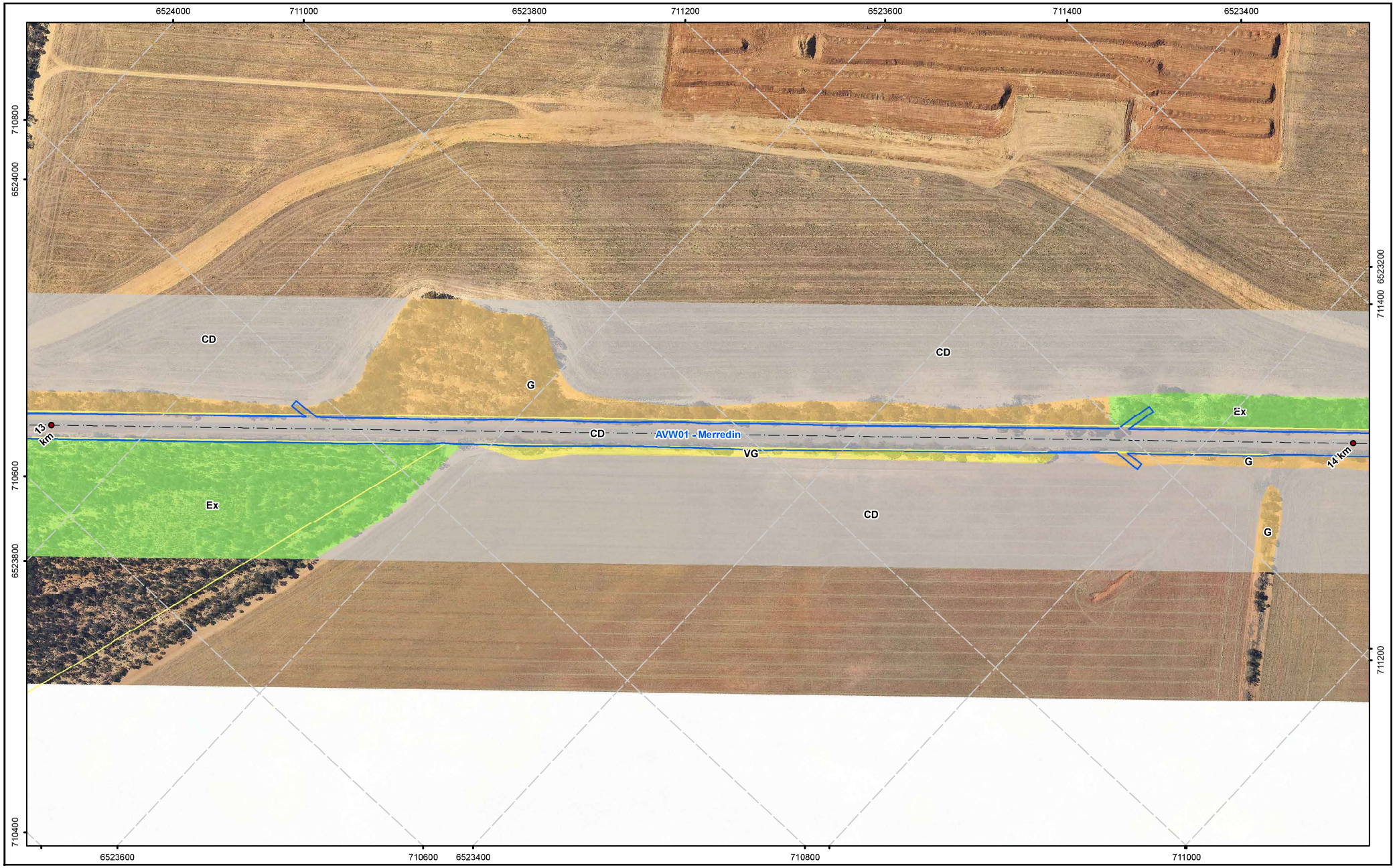
0 100 m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 12km to Chn 13km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 13km to Chn 14km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- G - Good
- Ex - Excellent

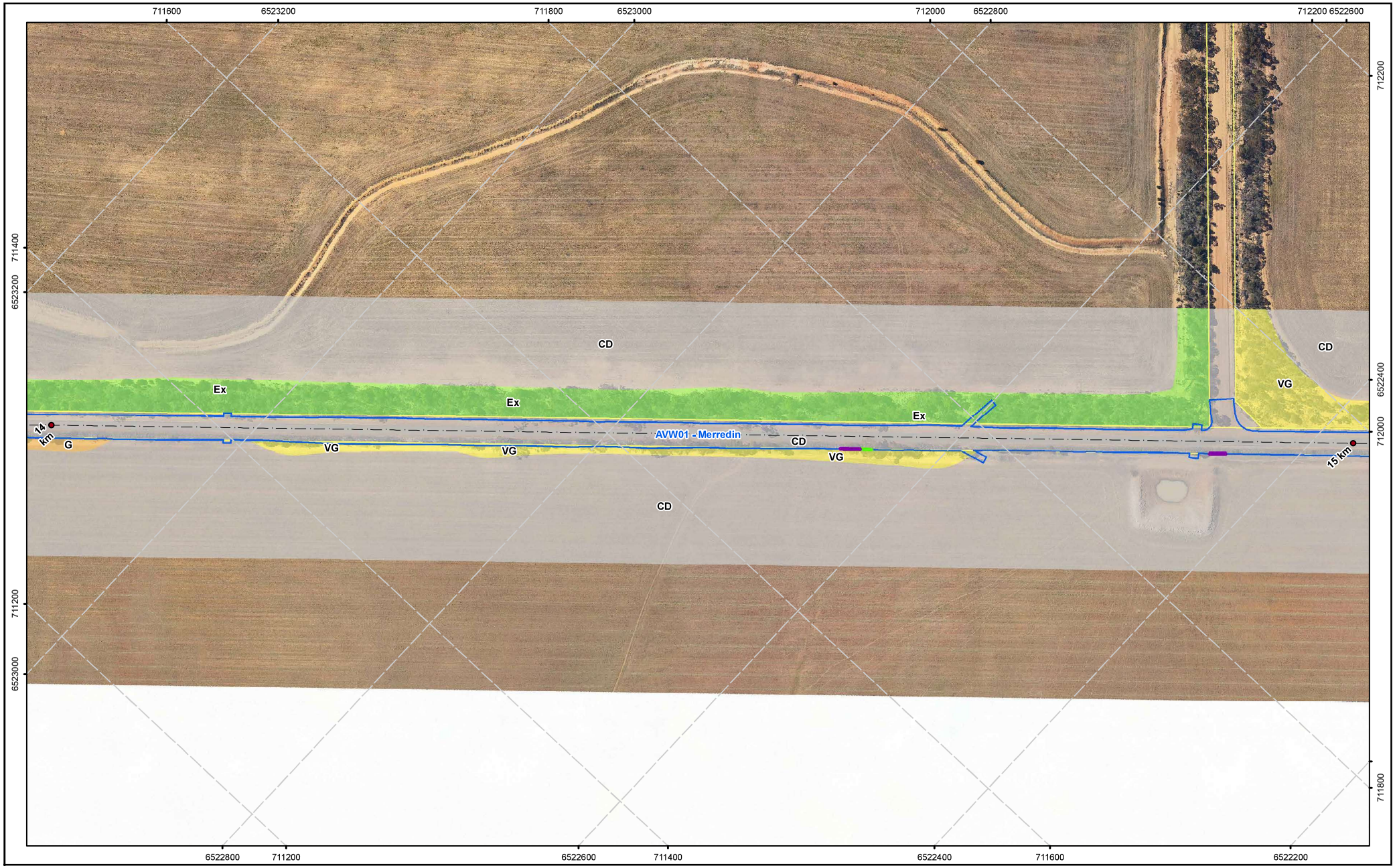
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 13km to Chn 14km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 14km to Chn 15km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Other native vegetation clearing footprint
- Cadastre
- G - Good
- Ex - Excellent

0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 14km to Chn 15km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 15km to Chn 16km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- G - Good

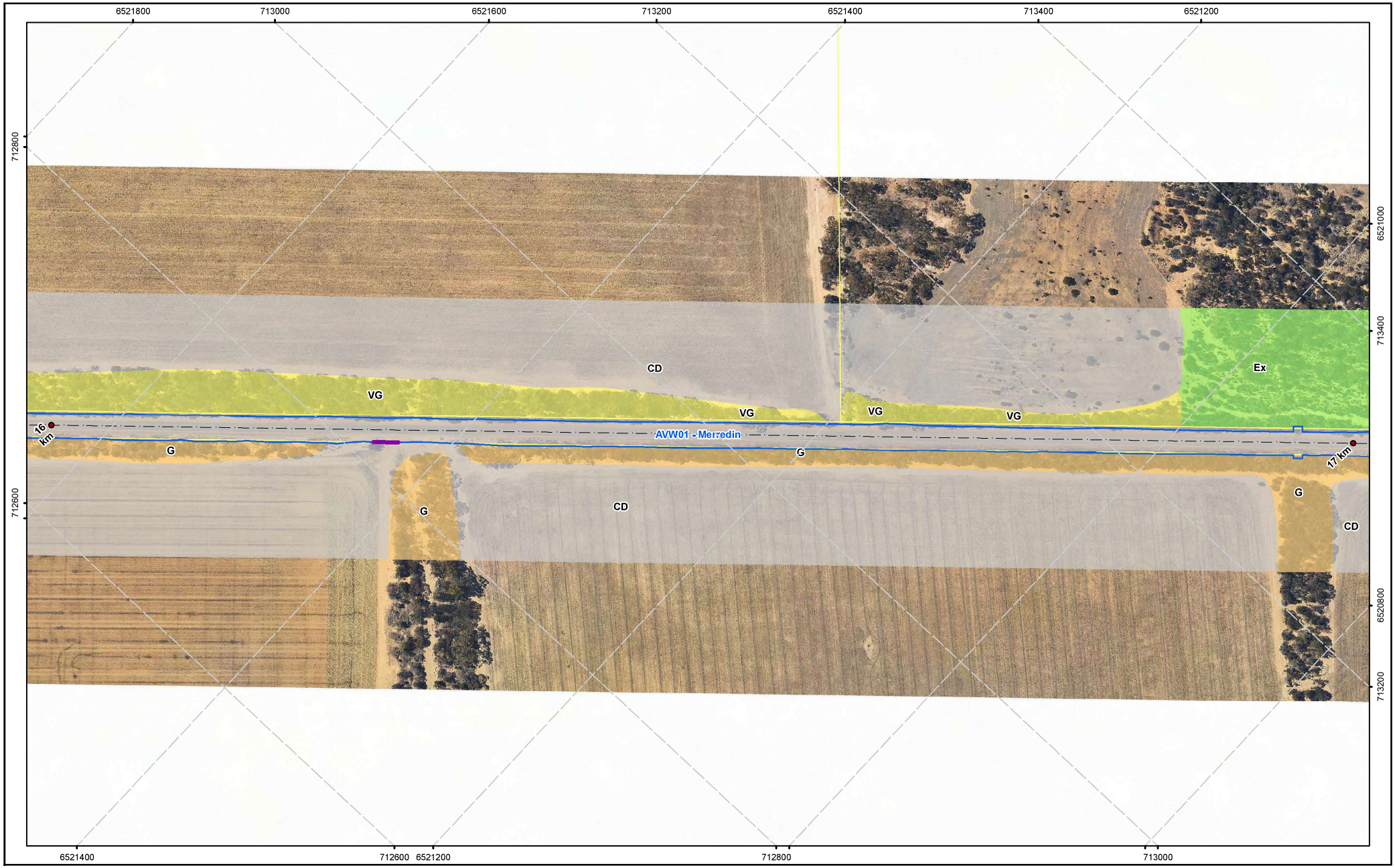
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 15km to Chn 16km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 16km to Chn 17km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- G - Good
- Ex - Excellent

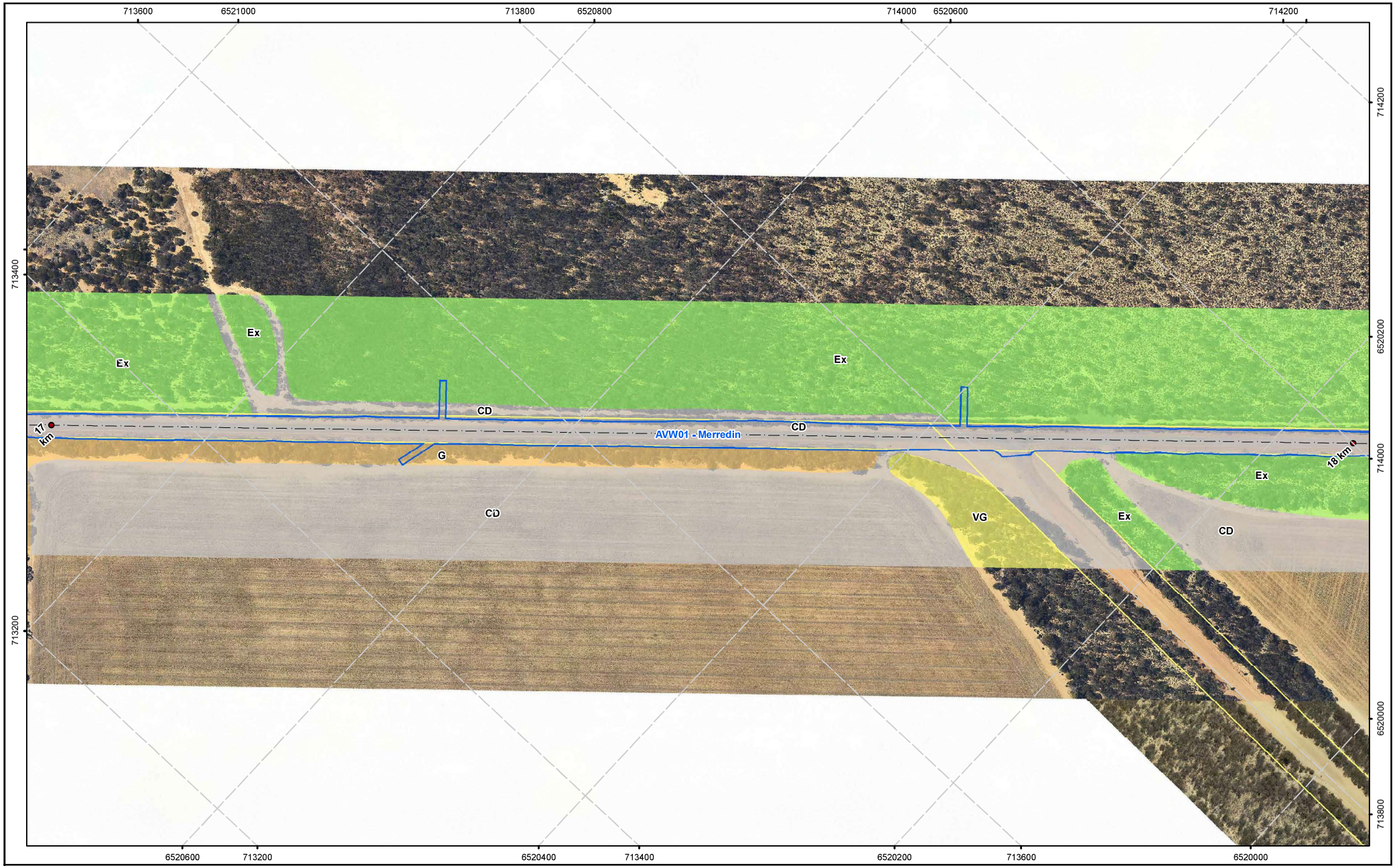
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 16km to Chn 17km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 17km to Chn 18km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- G - Good
- Ex - Excellent

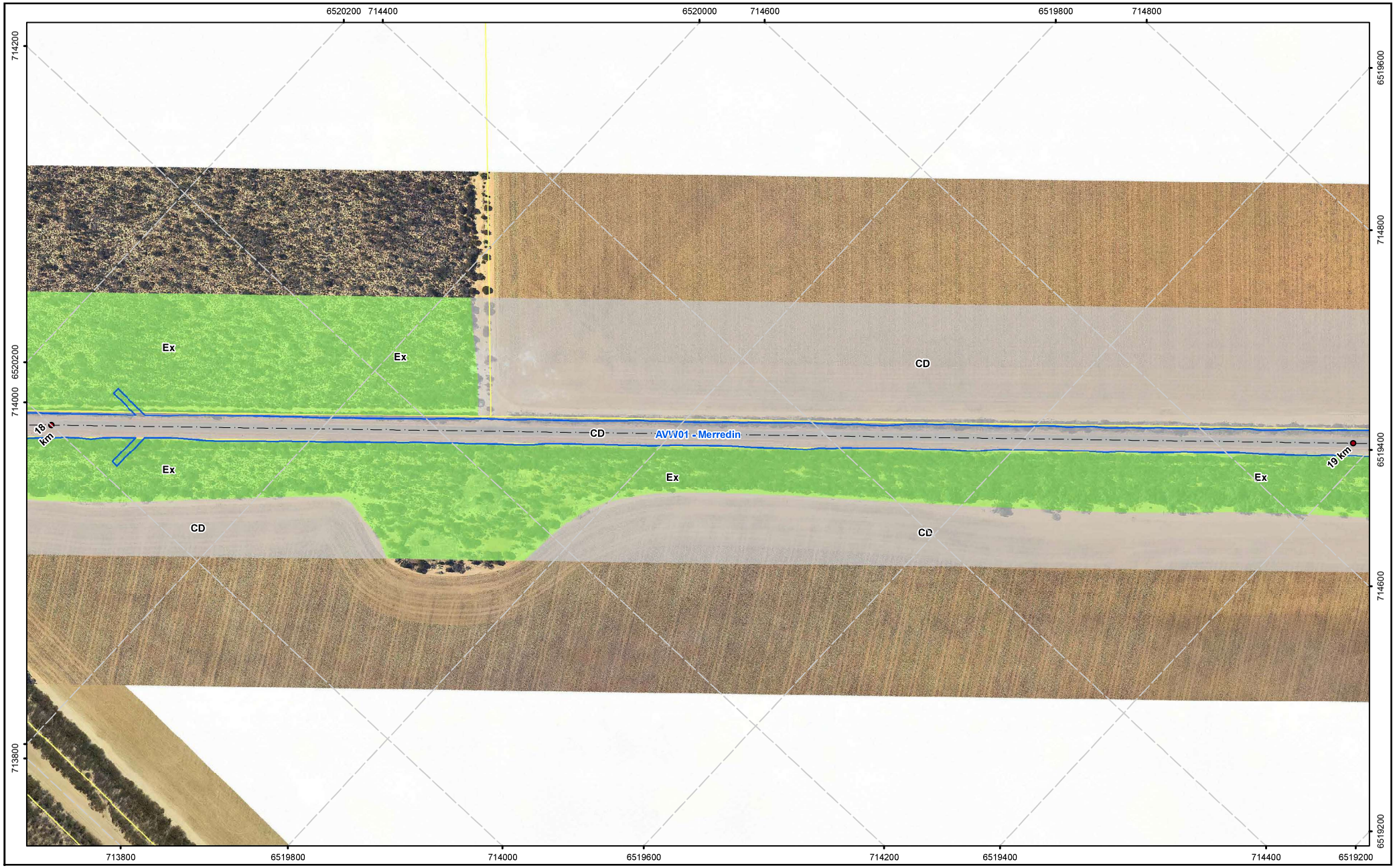
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 17km to Chn 18km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 18km to Chn 19km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

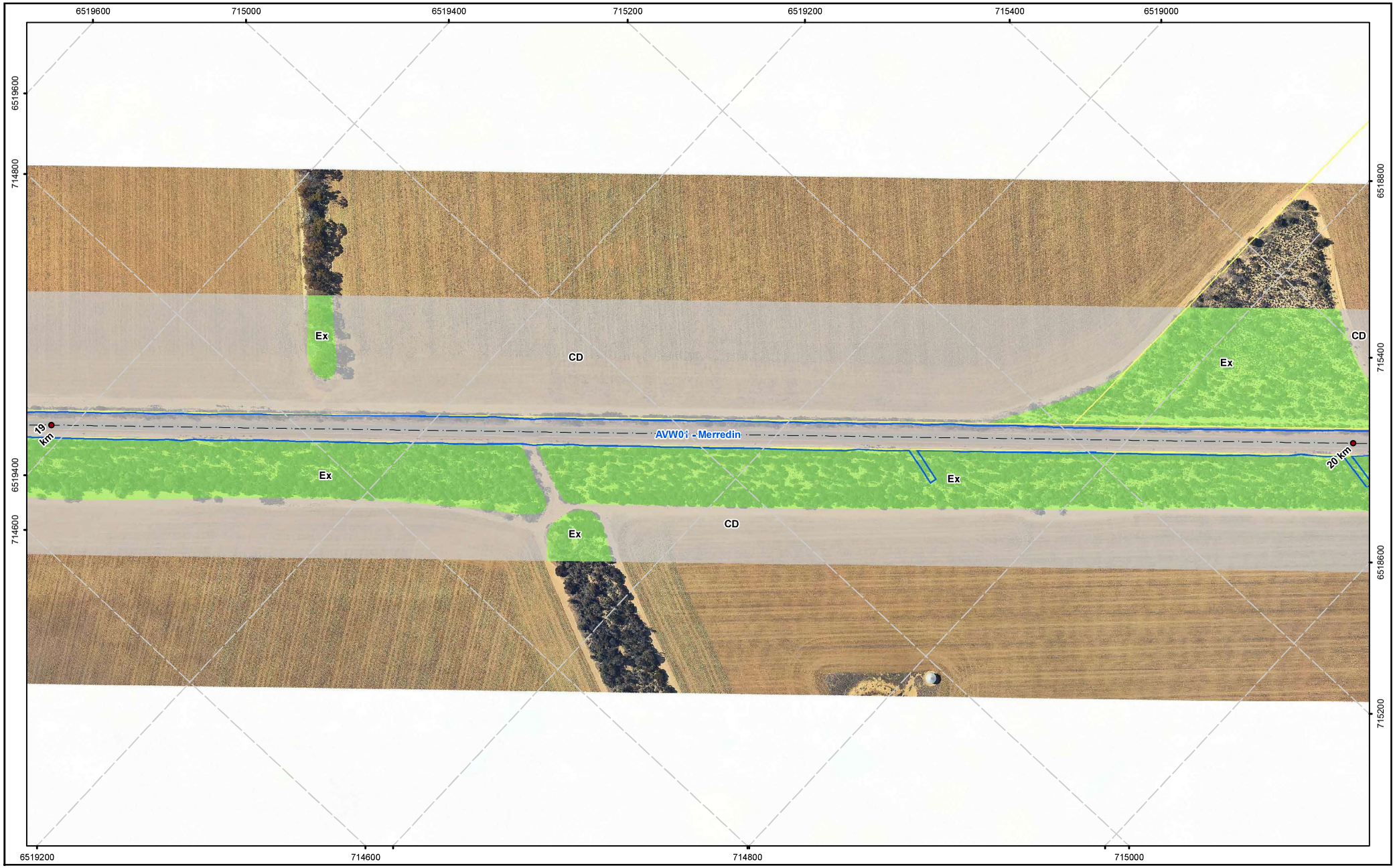
Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Ex - Excellent
Biogeographic Region
Cadastre

0 100 m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 18km to Chn 19km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 19km to Chn 20km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

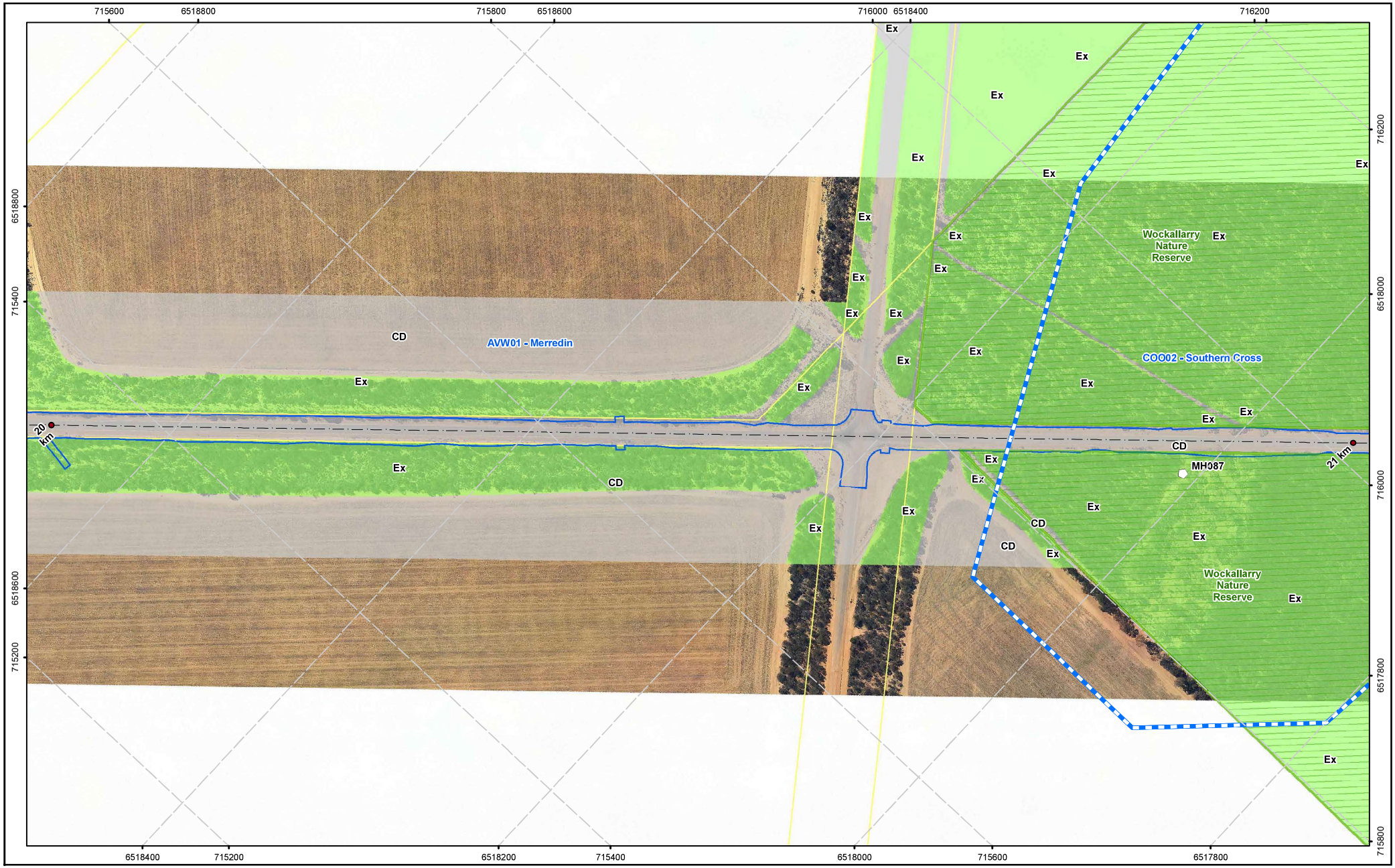
Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Ex - Excellent
Biogeographic Region
Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 19km to Chn 20km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 20km to Chn 21km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Ex - Excellent
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 20km to Chn 21km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 21km to Chn 22km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

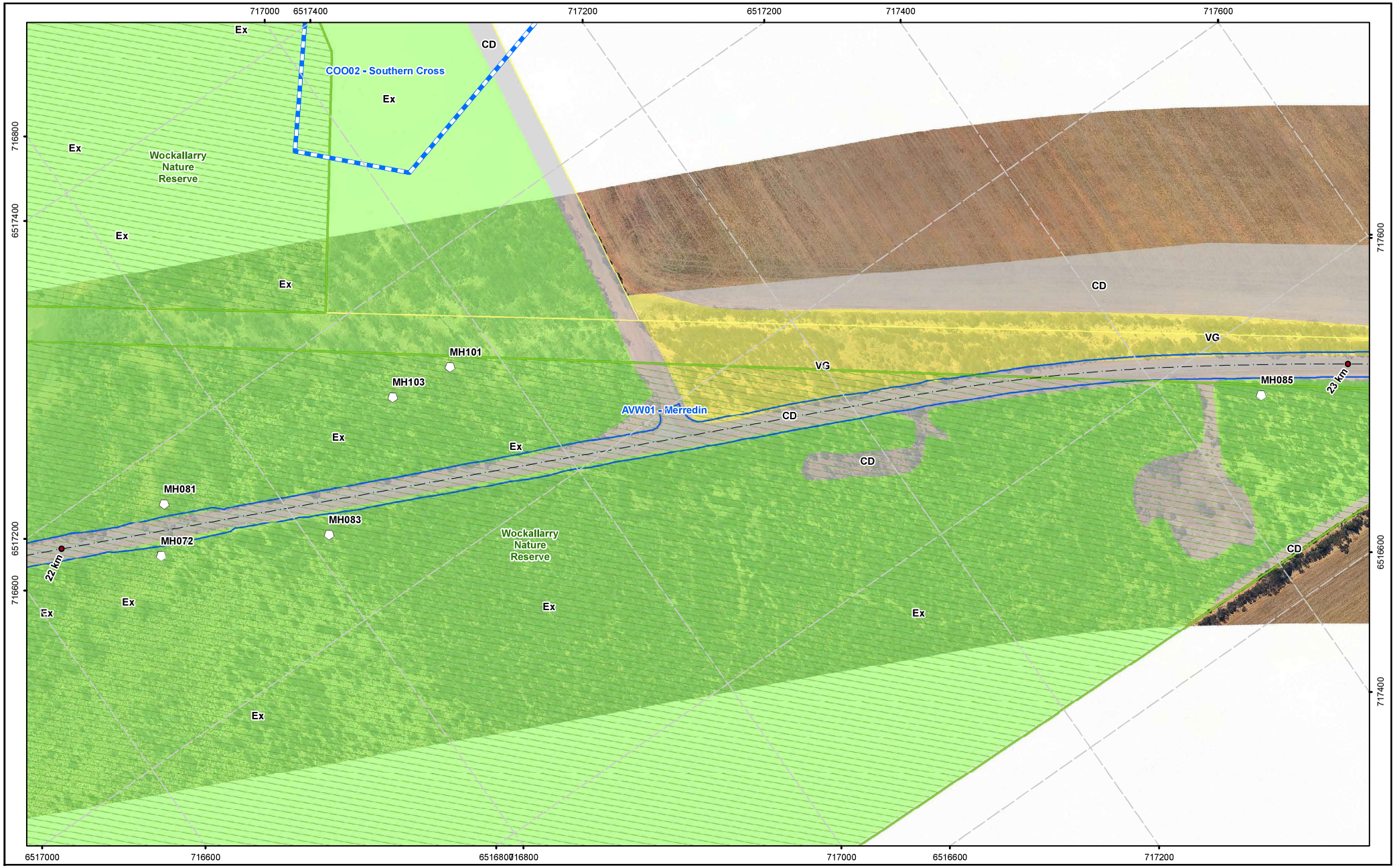
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Ex - Excellent
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 21km to Chn 22km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 22km to Chn 23km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Ex - Excellent
- Biogeographic Region
- Cadastre
- VG - Very Good
- DBCA Legislated Land

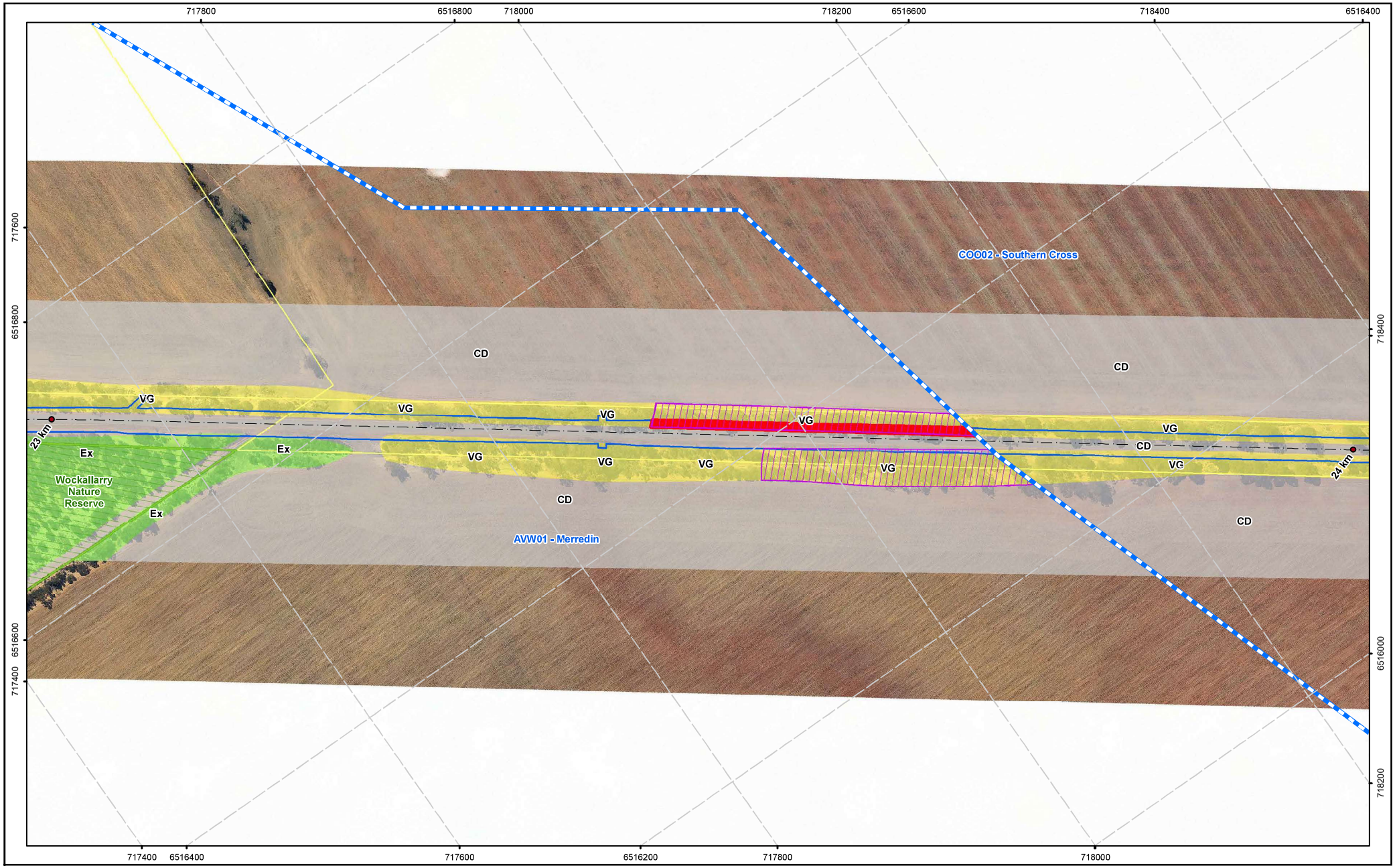
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 22km to Chn 23km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 23km to Chn 24km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- TEC clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Ex - Excellent
- Biogeographic Region
- Cadastre
- VG - Very Good
- DBCA Legislated Land
- Likely TEC

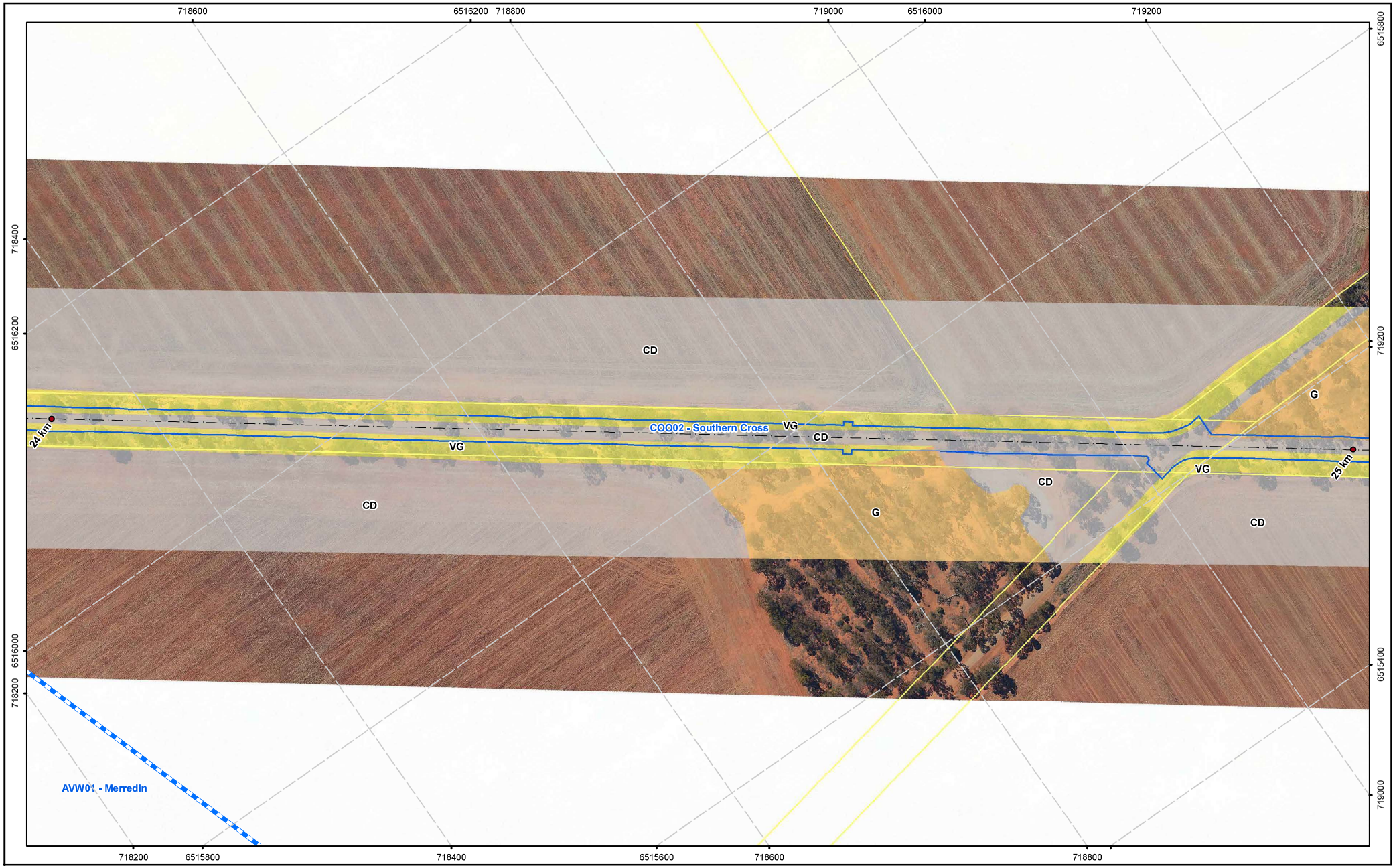
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 23km to Chn 24km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 24km to Chn 25km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- G - Good

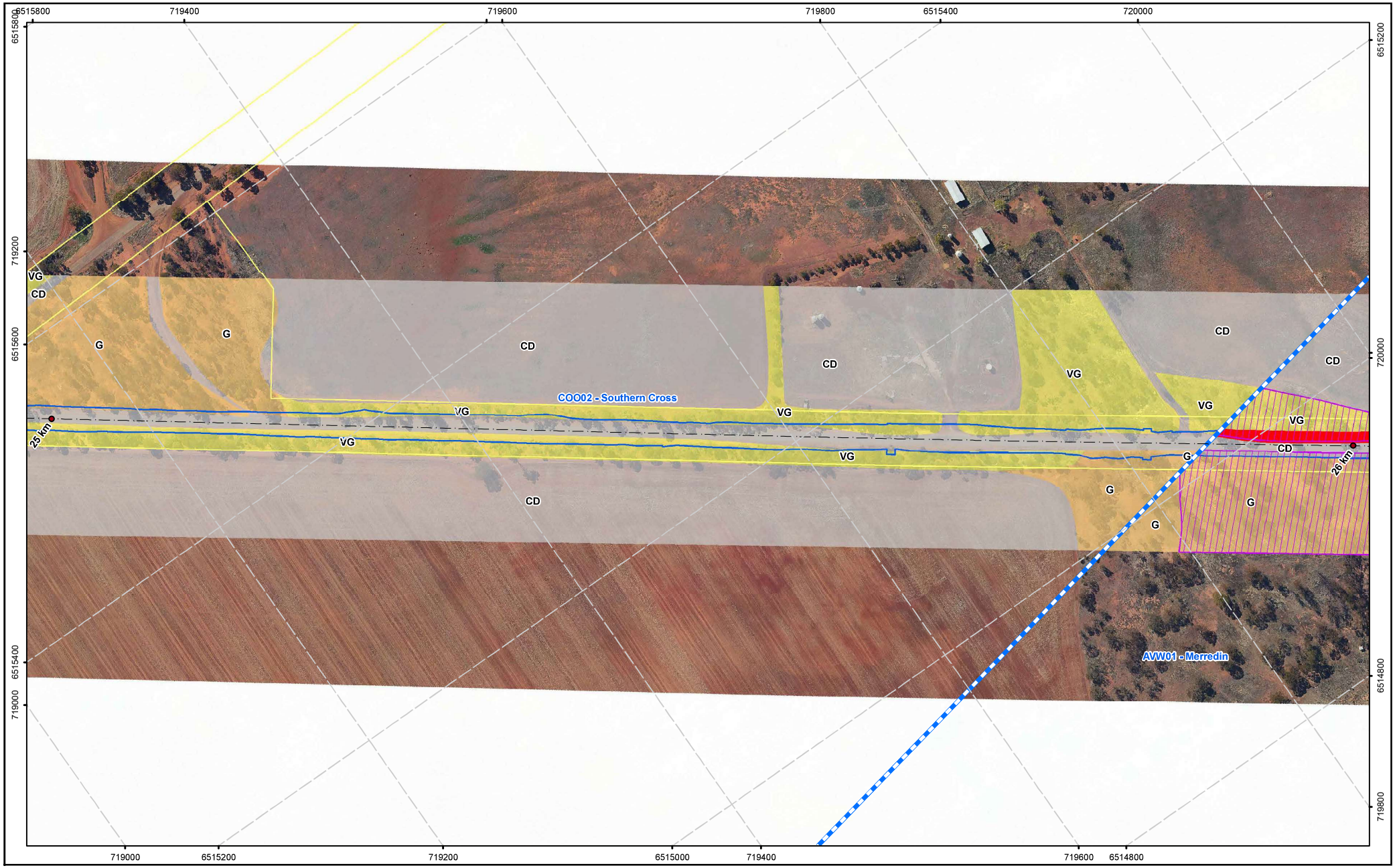
0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 24km to Chn 25km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 25km to Chn 26km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- TEC clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- G - Good
- Likely TEC

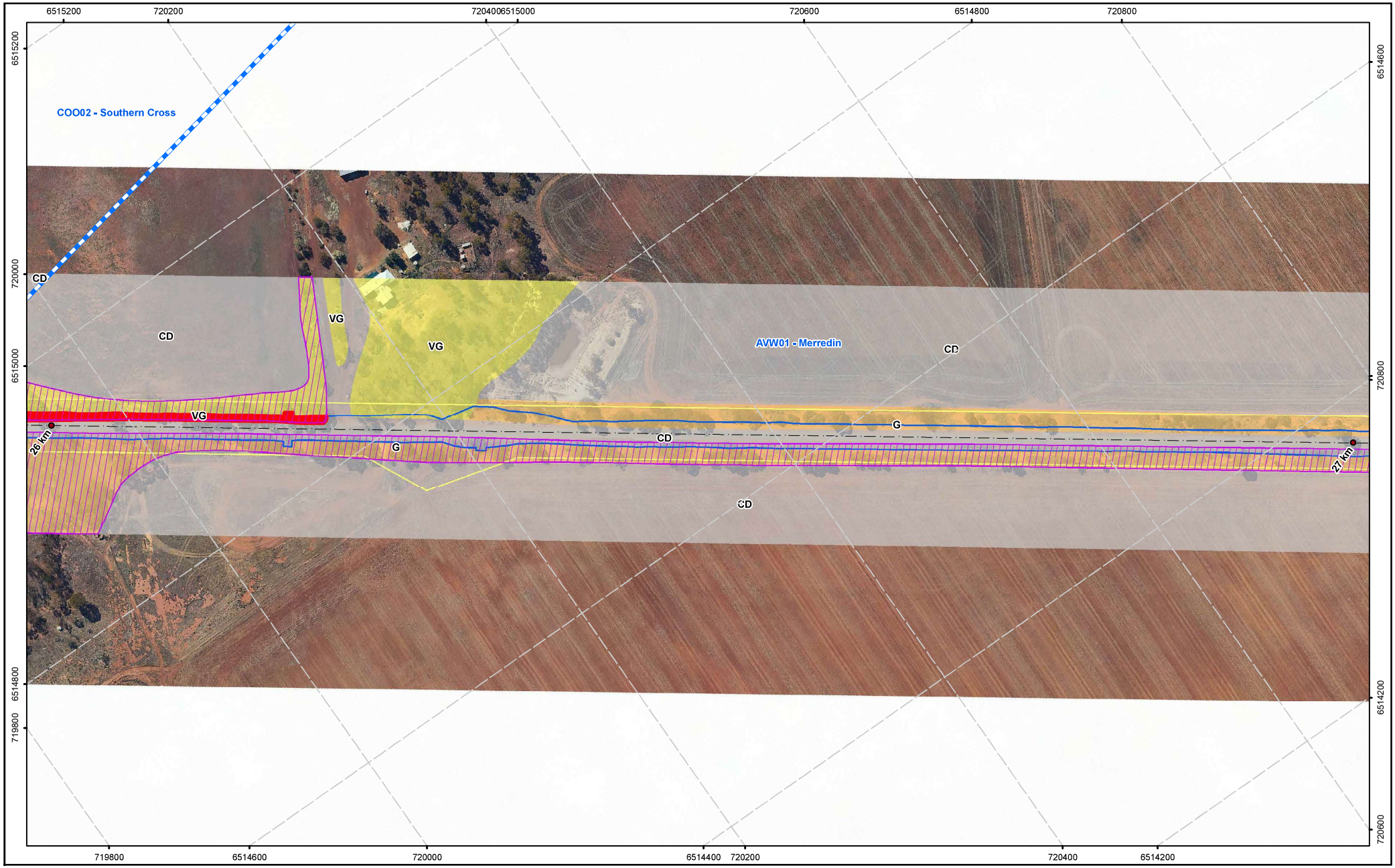
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 25km to Chn 26km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 26km to Chn 27km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
- Road Centreline
- TEC clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- G - Good
- Likely TEC

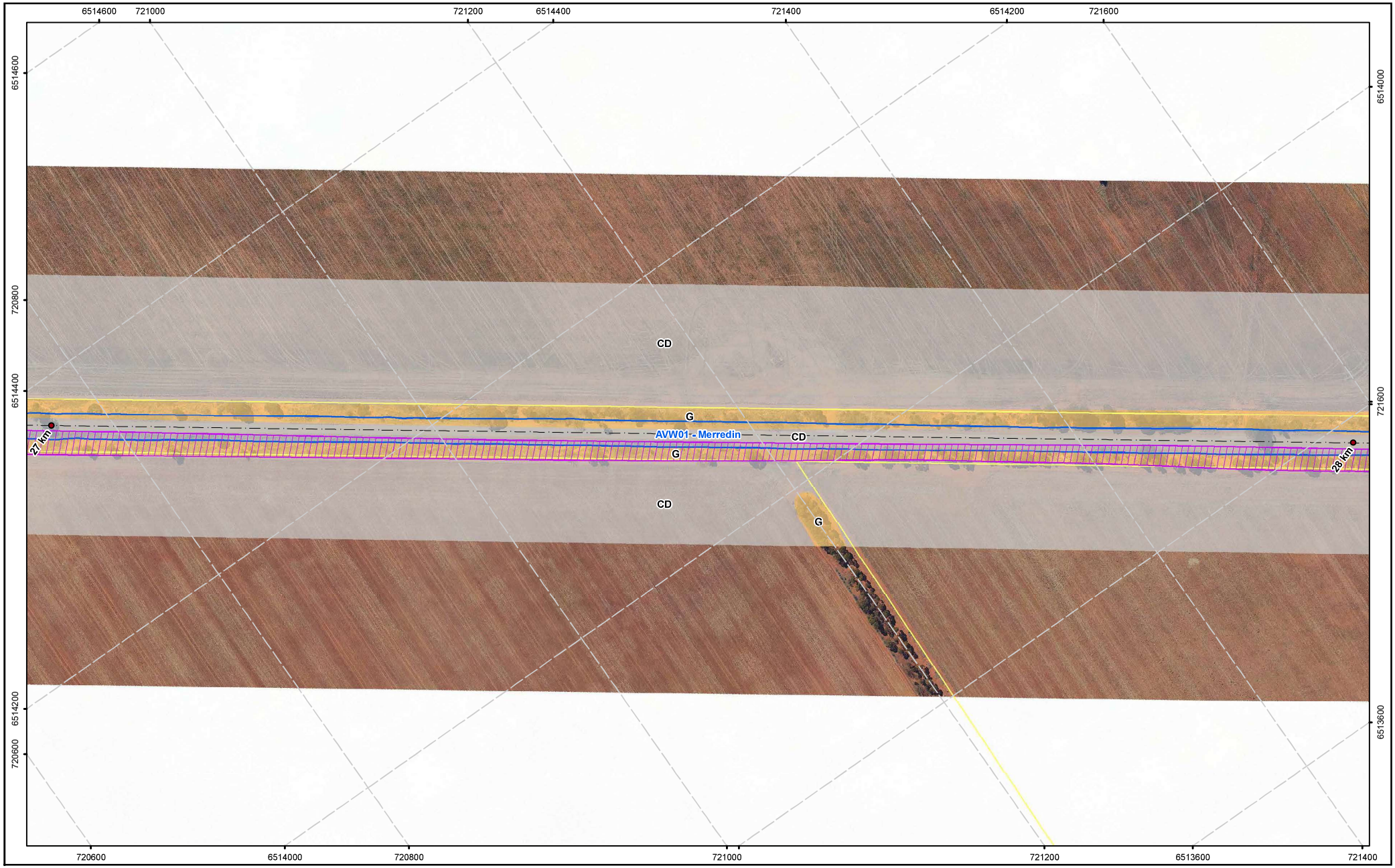
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 26km to Chn 27km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 27km to Chn 28km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- G - Good
- Biogeographic Region
- Cadastre
- Likely TEC

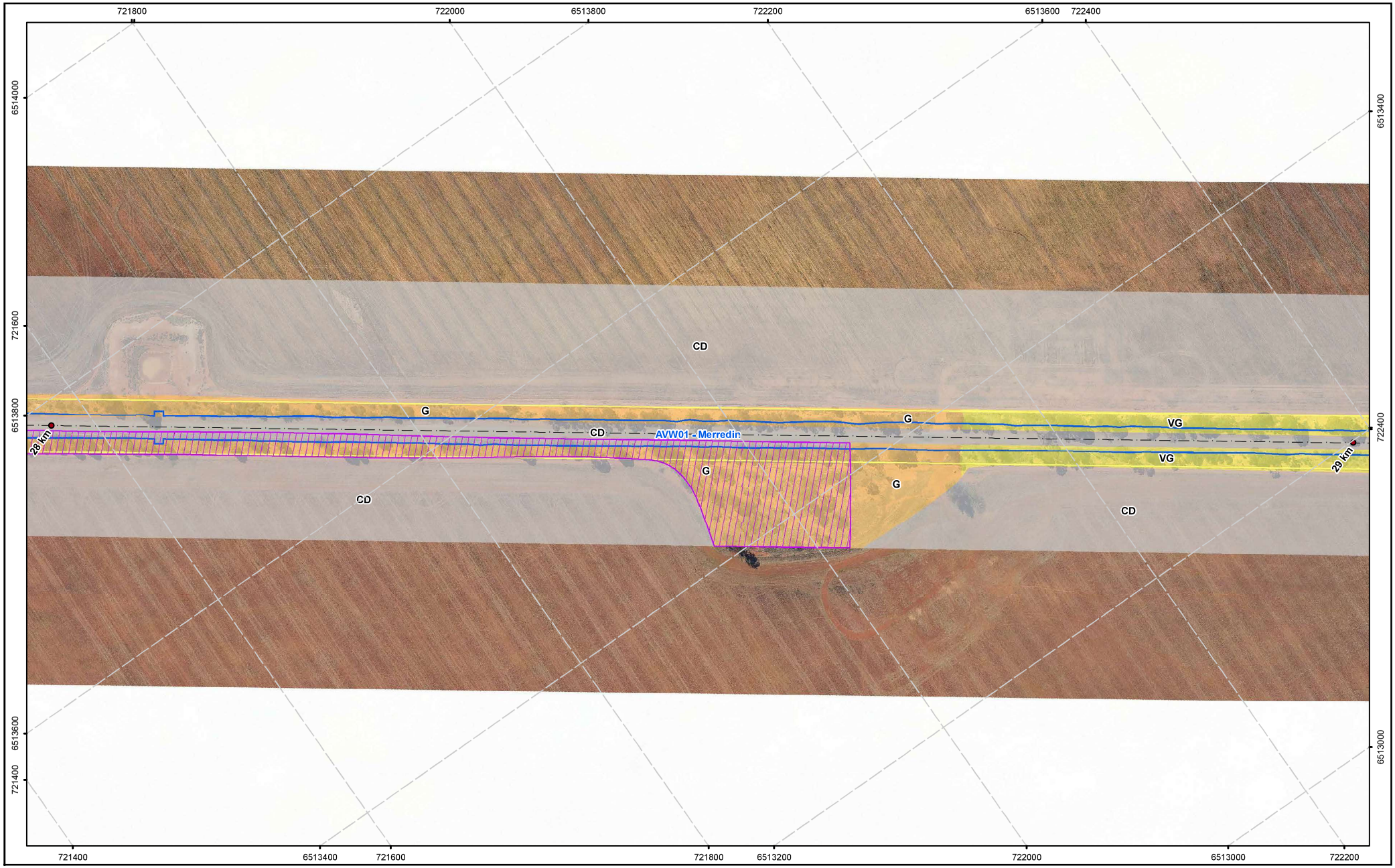
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 27km to Chn 28km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 28km to Chn 29km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- G - Good
- Likely TEC

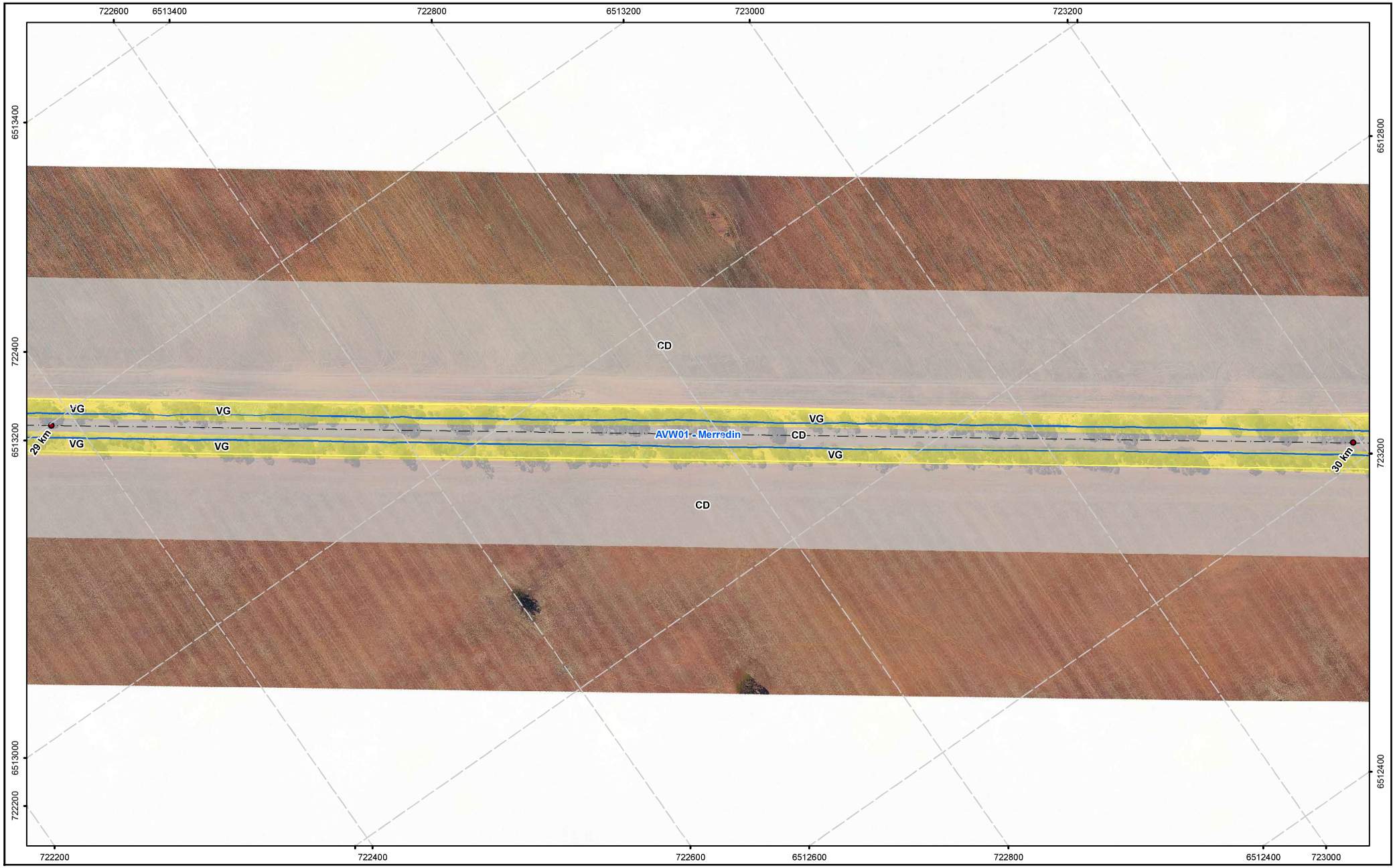
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 28km to Chn 29km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 29km to Chn 30km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

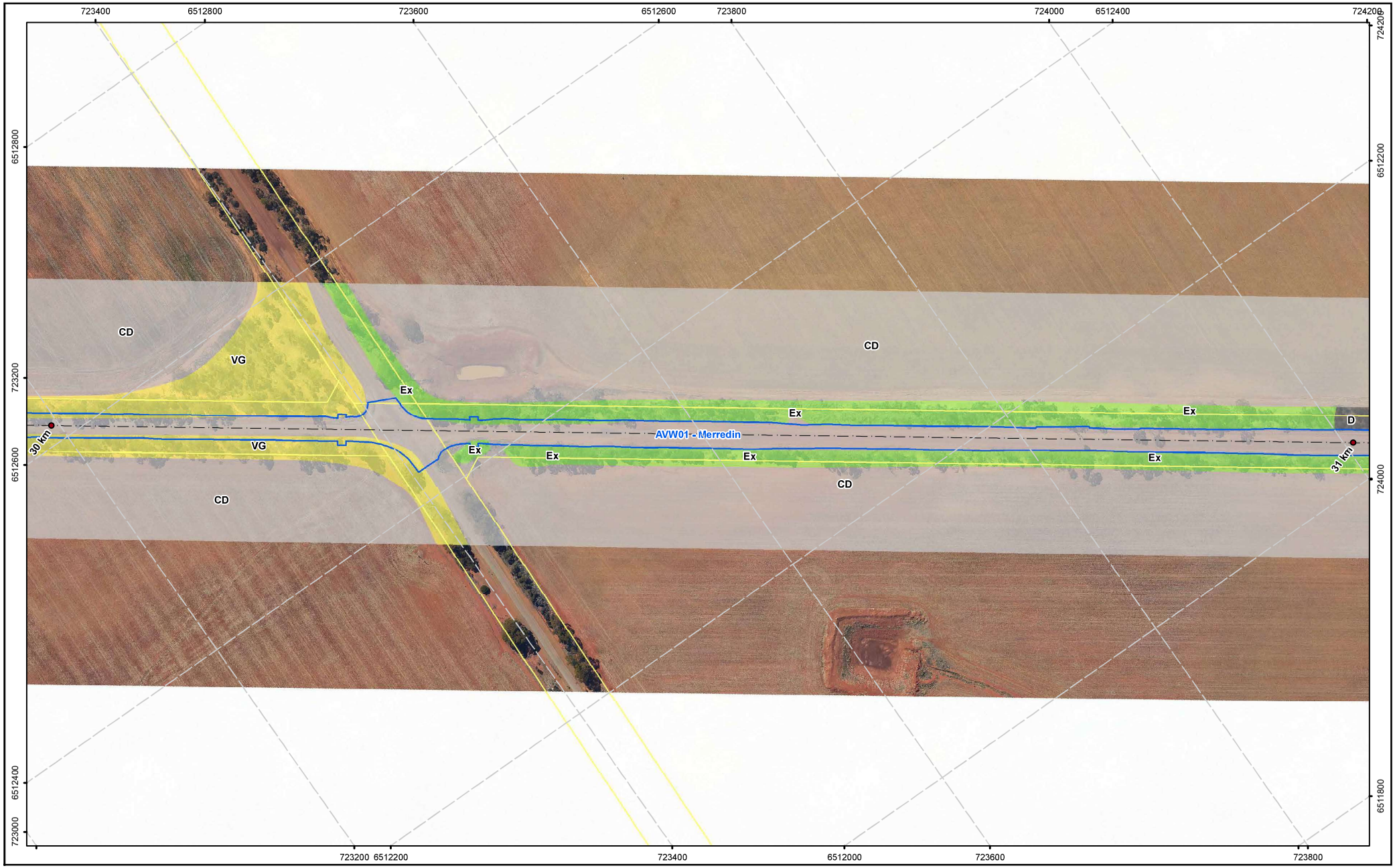
Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
VG - Very Good
Biogeographic Region
Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 29km to Chn 30km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 30km to Chn 31km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- D - Degraded
- Ex - Excellent

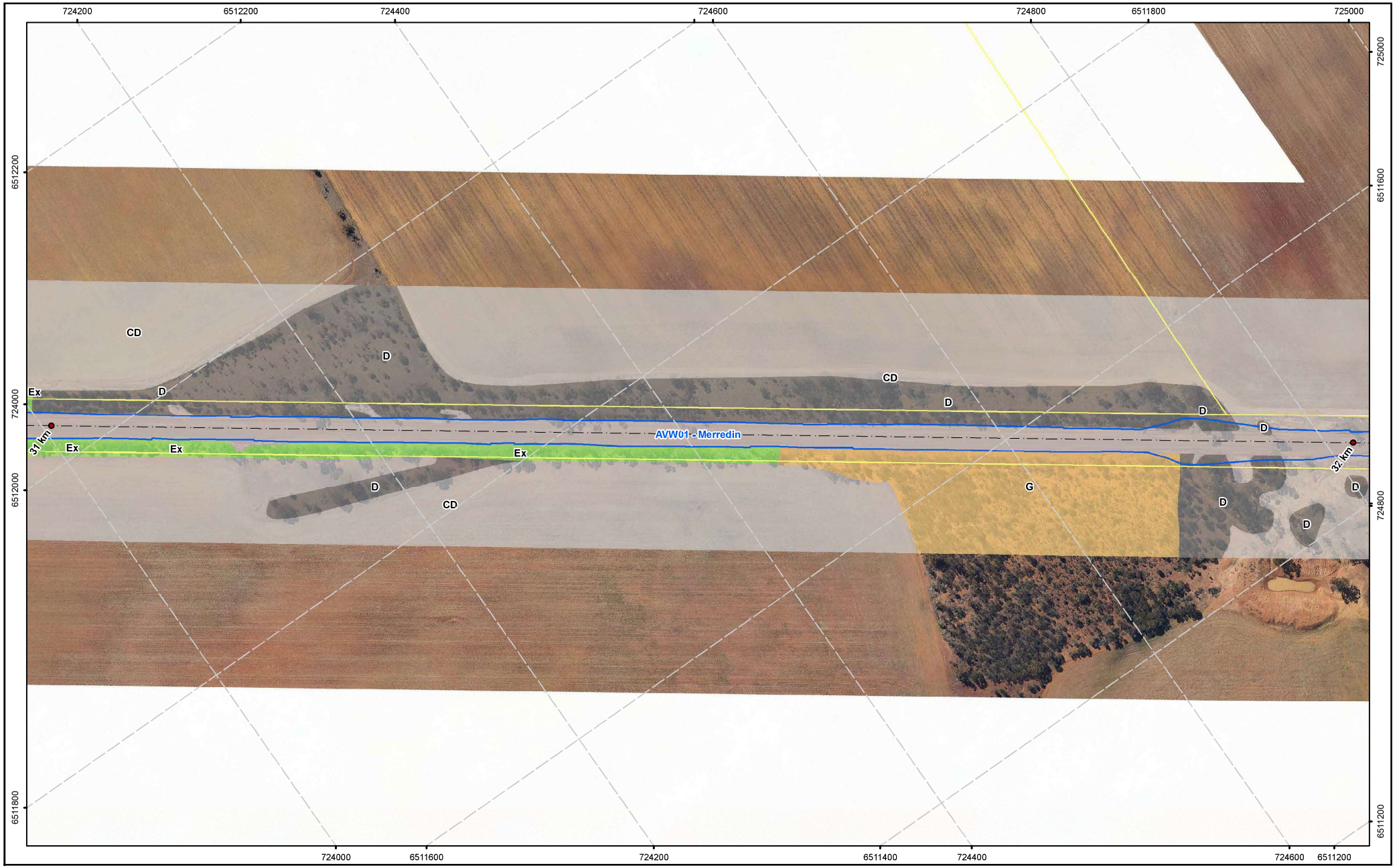
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 30km to Chn 31km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 31km to Chn 32km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- G - Good
- Biogeographic Region
- Cadastre
- D - Degraded
- Ex - Excellent

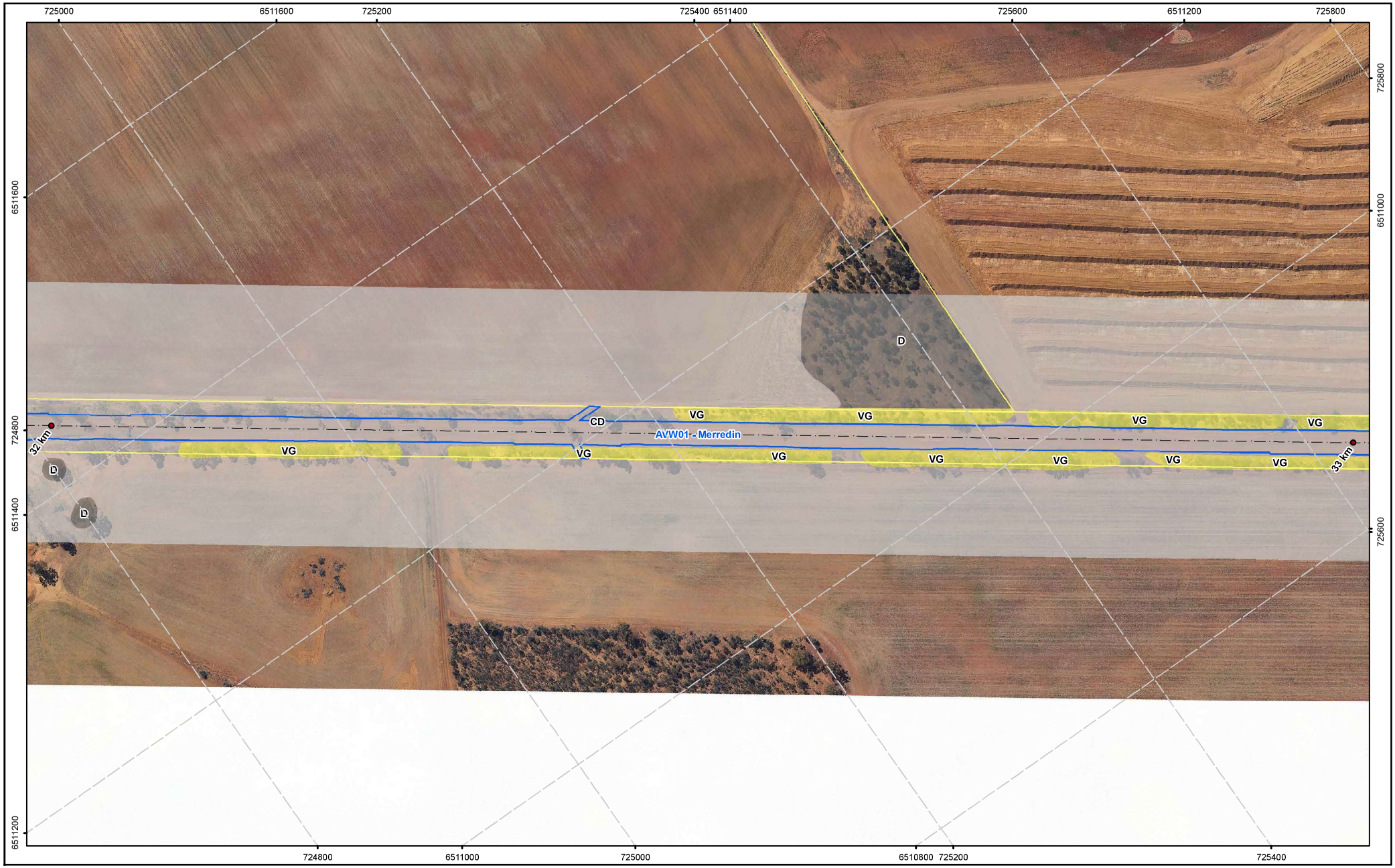
0 100 m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 31km to Chn 32km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 32km to Chn 33km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- D - Degraded

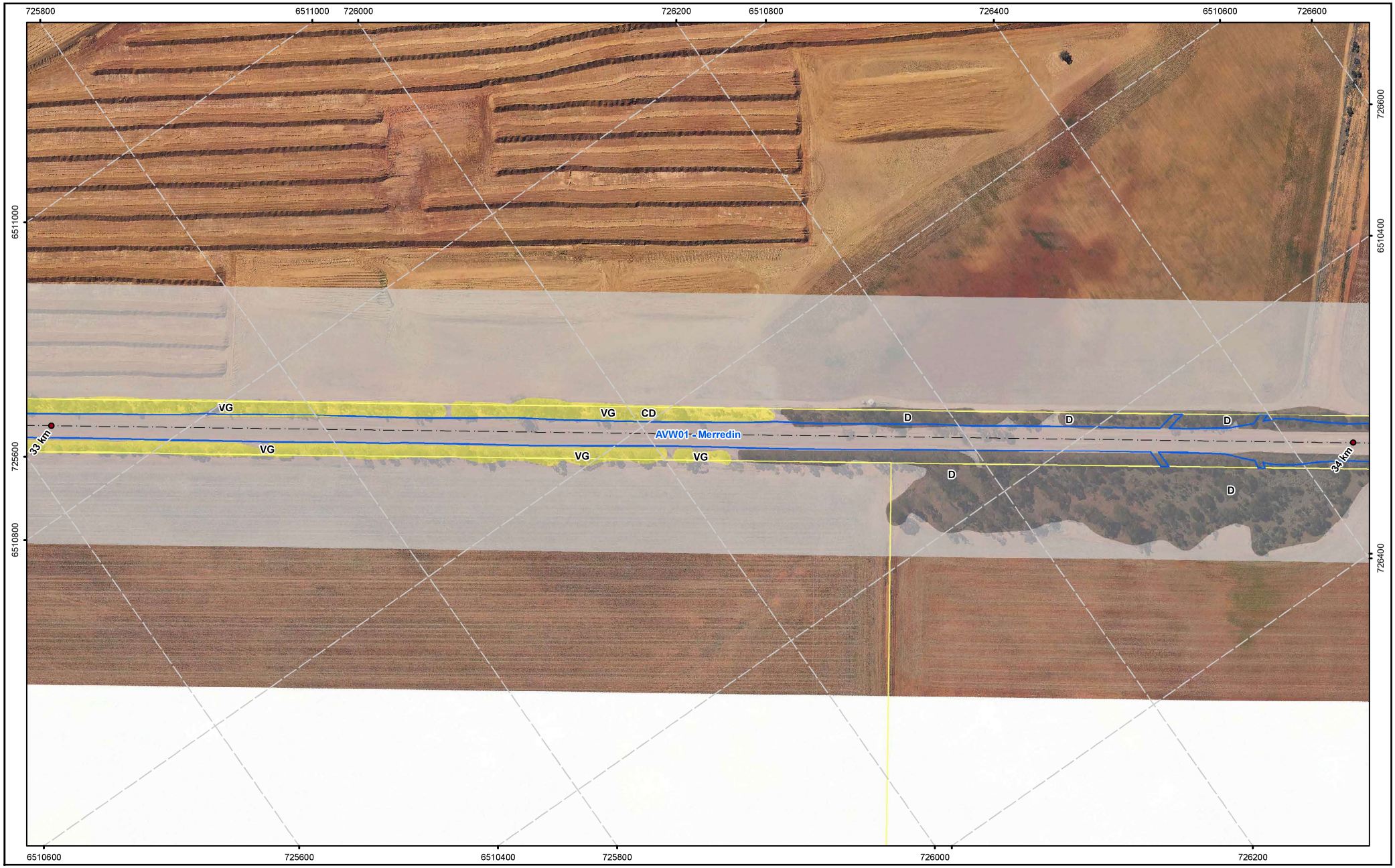
0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 32km to Chn 33km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 33km to Chn 34km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- D - Degraded

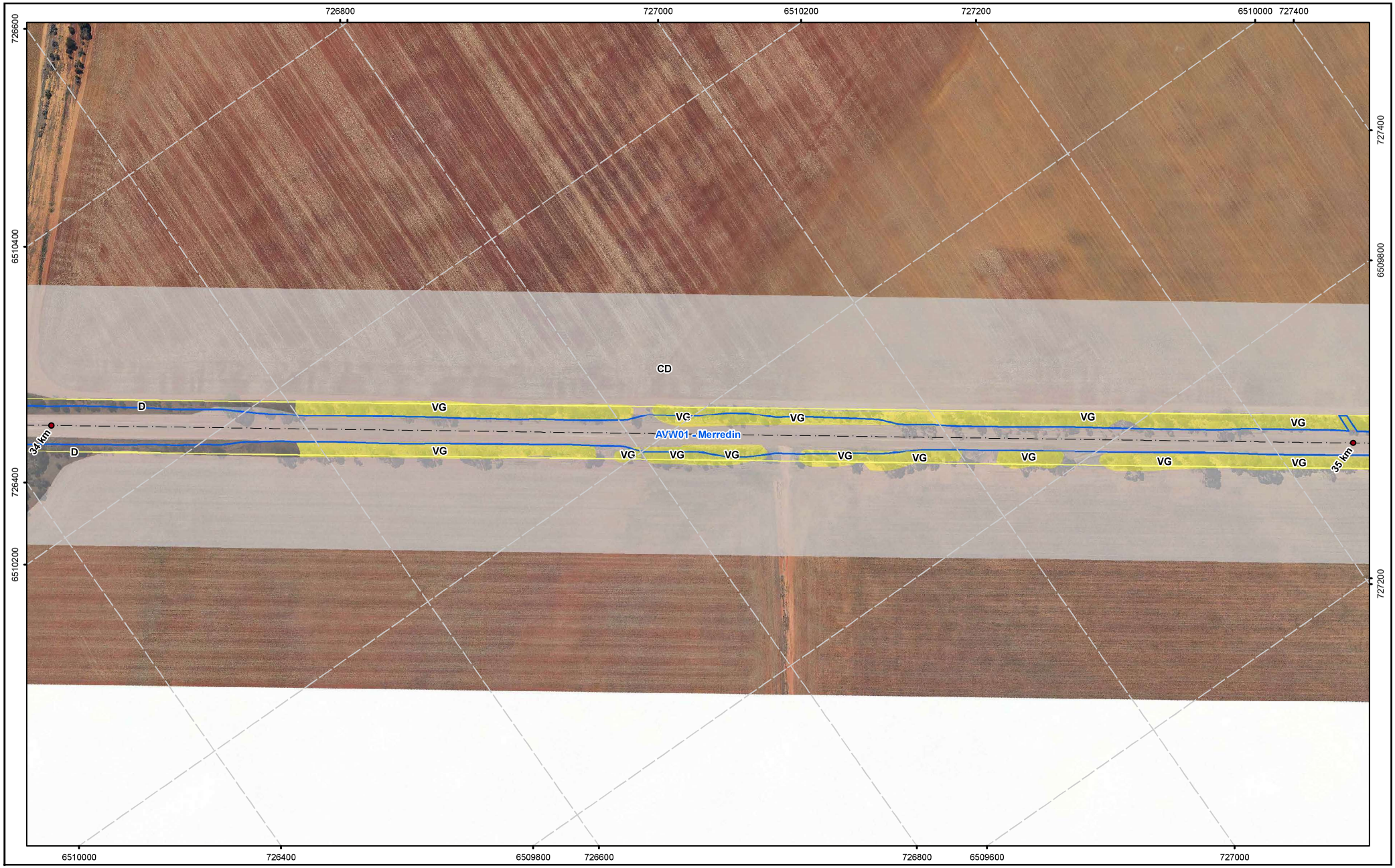
0 100 m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 33km to Chn 34km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 34km to Chn 35km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- D - Degraded

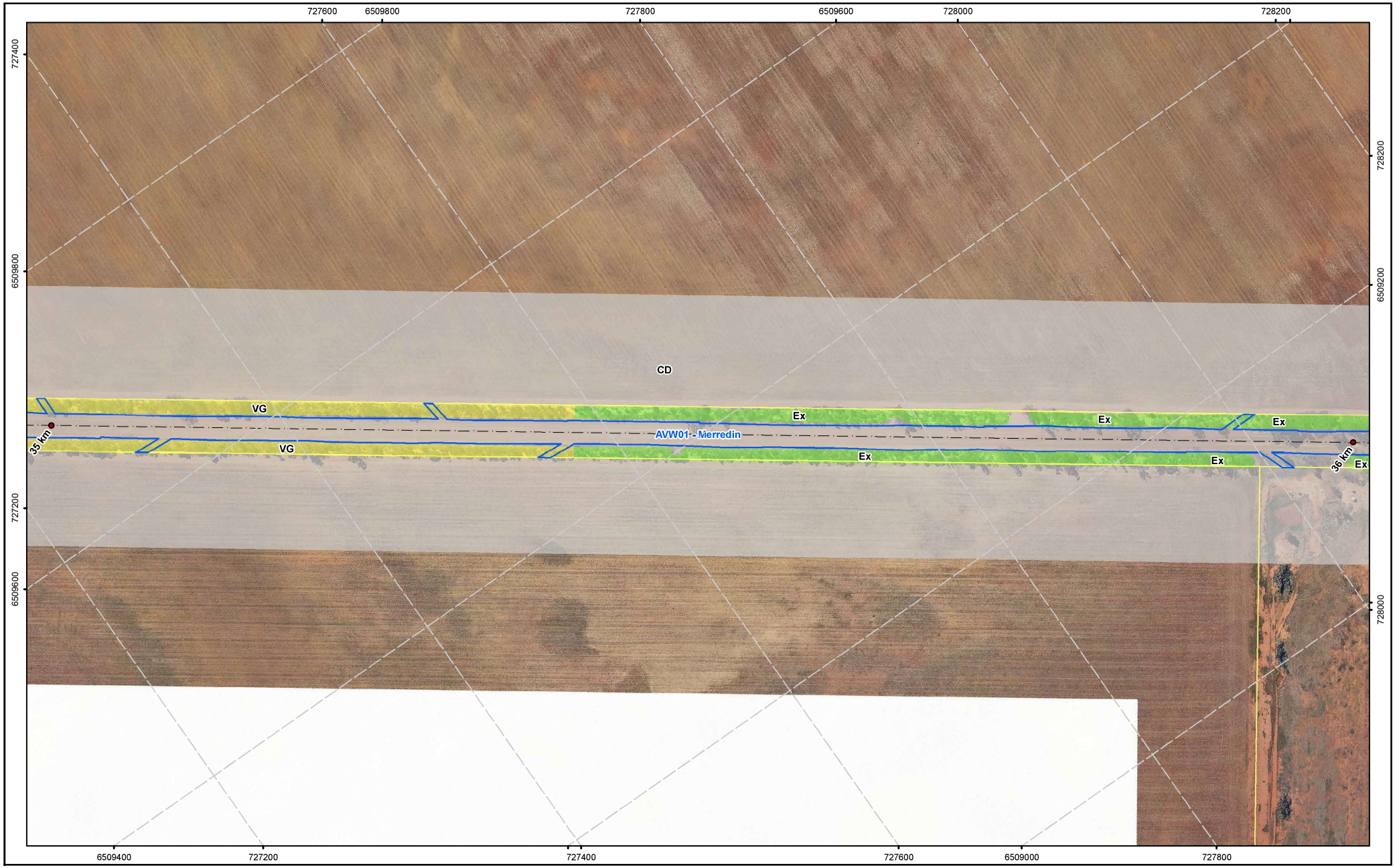
0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 34km to Chn 35km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 35km to Chn 36km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Ex - Excellent
- Biogeographic Region
- Cadastre
- VG - Very Good

0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 35km to Chn 36km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 36km to Chn 37km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline · Previous Clearing Permit Boundary · CD - Completely Degraded · Ex - Excellent
Biogeographic Region · Cadastre · D - Degraded

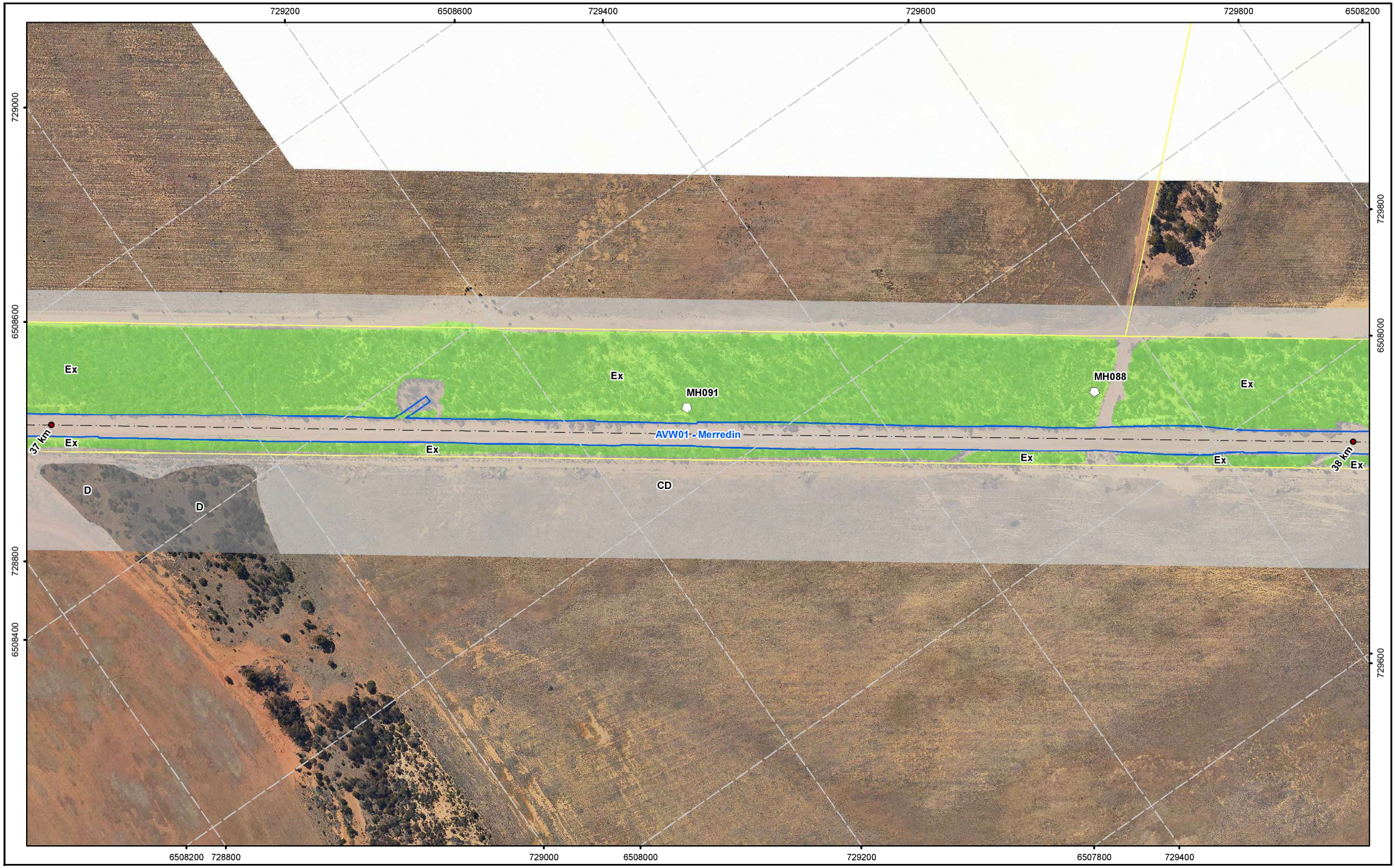
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 36km to Chn 37km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 37km to Chn 38km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline · Previous Clearing Permit Boundary · CD - Completely Degraded · Ex - Excellent
Biogeographic Region · Cadastre · D - Degraded

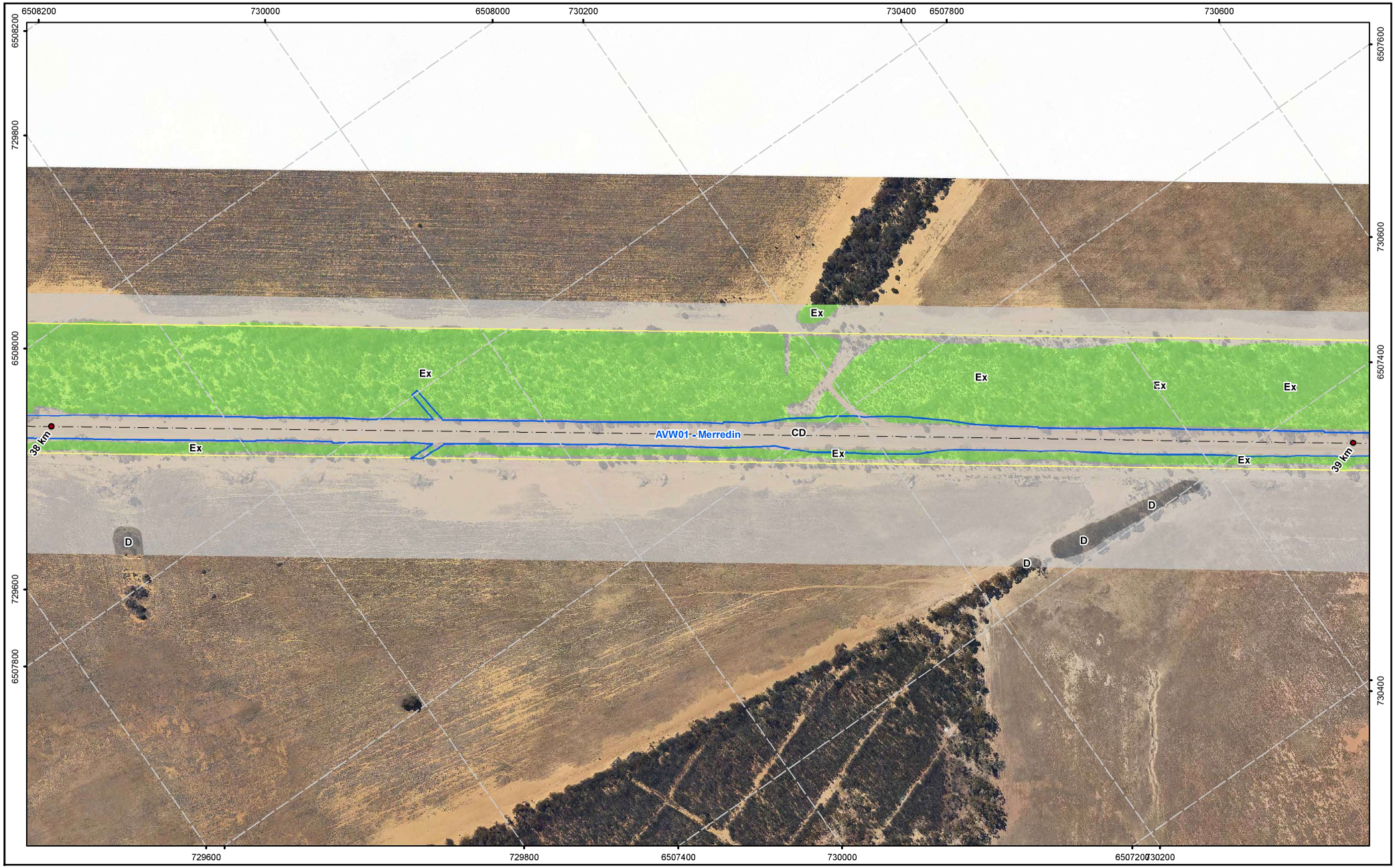
0 100 m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 37km to Chn 38km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 38km to Chn 39km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Ex - Excellent
Biogeographic Region
Cadastre
D - Degraded

0 100 m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 38km to Chn 39km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 39km to Chn 40km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Ex - Excellent
Biogeographic Region
Cadastre
D - Degraded

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 39km to Chn 40km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 40km to Chn 41km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline — Previous Clearing Permit Boundary — CD - Completely Degraded — Ex - Excellent
Biogeographic Region — Cadastre — D - Degraded

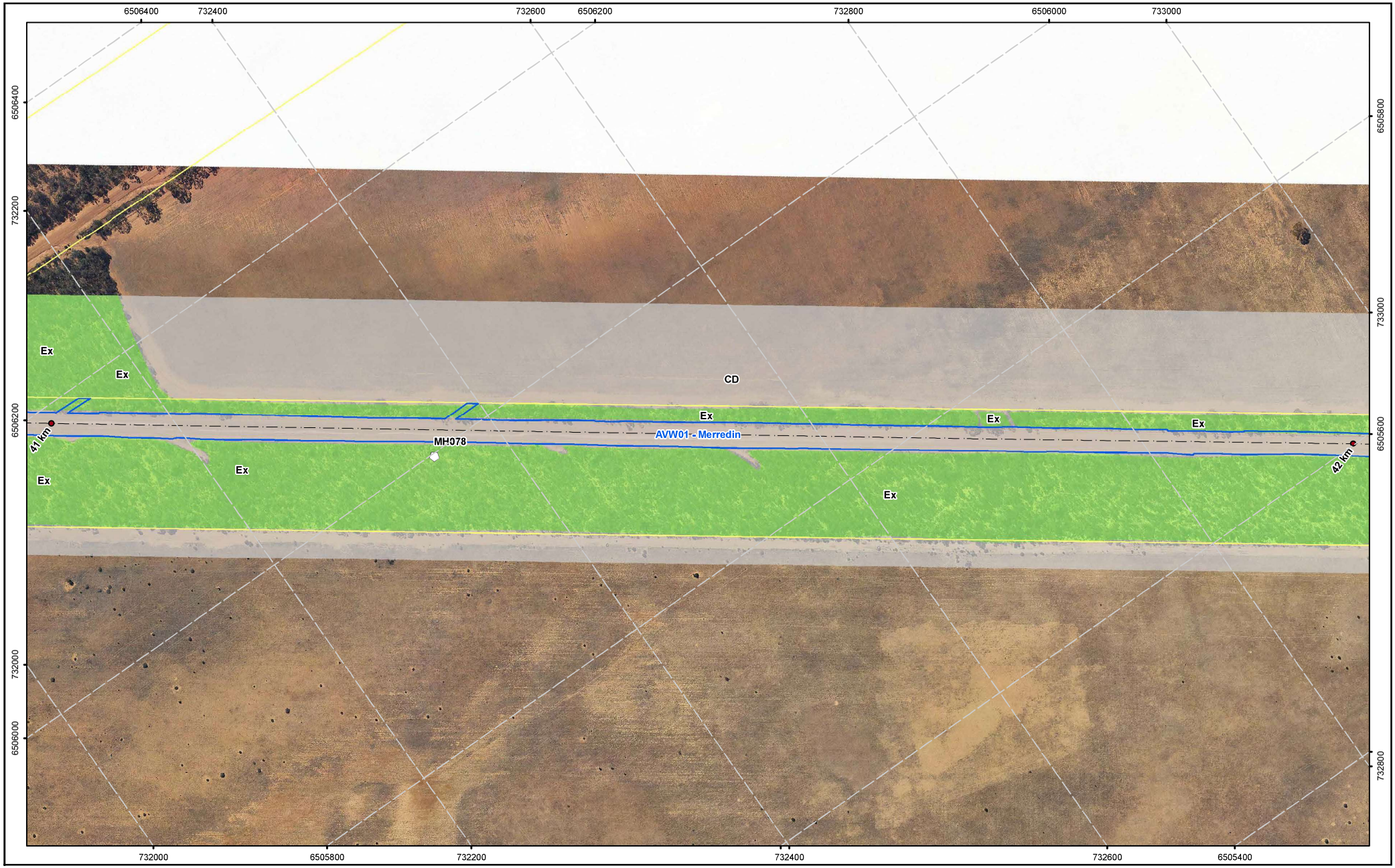
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 40km to Chn 41km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 41km to Chn 42km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

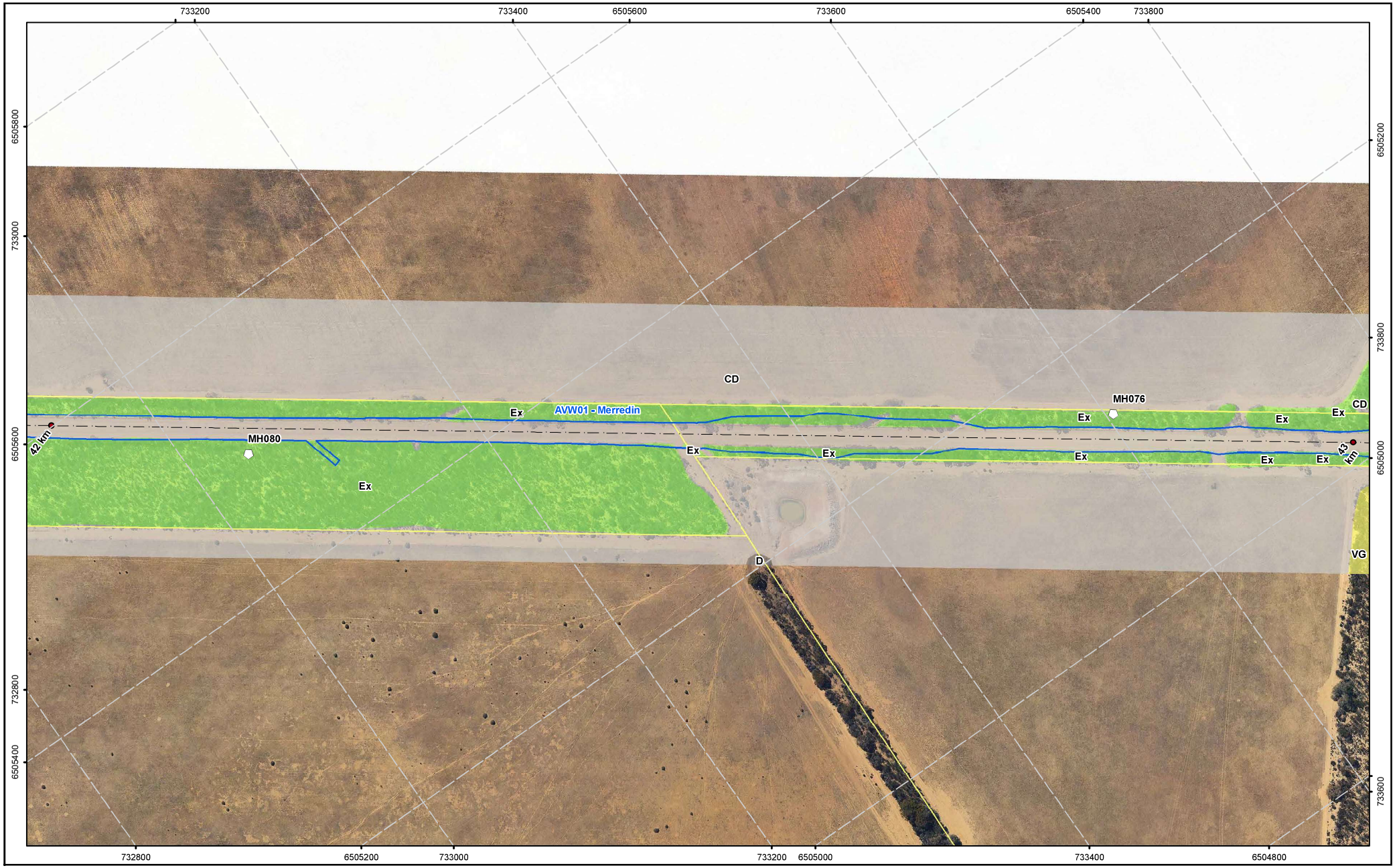
Legend
Quadrat · - Road Centreline Previous Clearing Permit Boundary CD - Completely Degraded Ex - Excellent
Biogeographic Region Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 41km to Chn 42km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 42km to Chn 43km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Biogeographic Region
- Cadastre
- D - Degraded
- Ex - Excellent

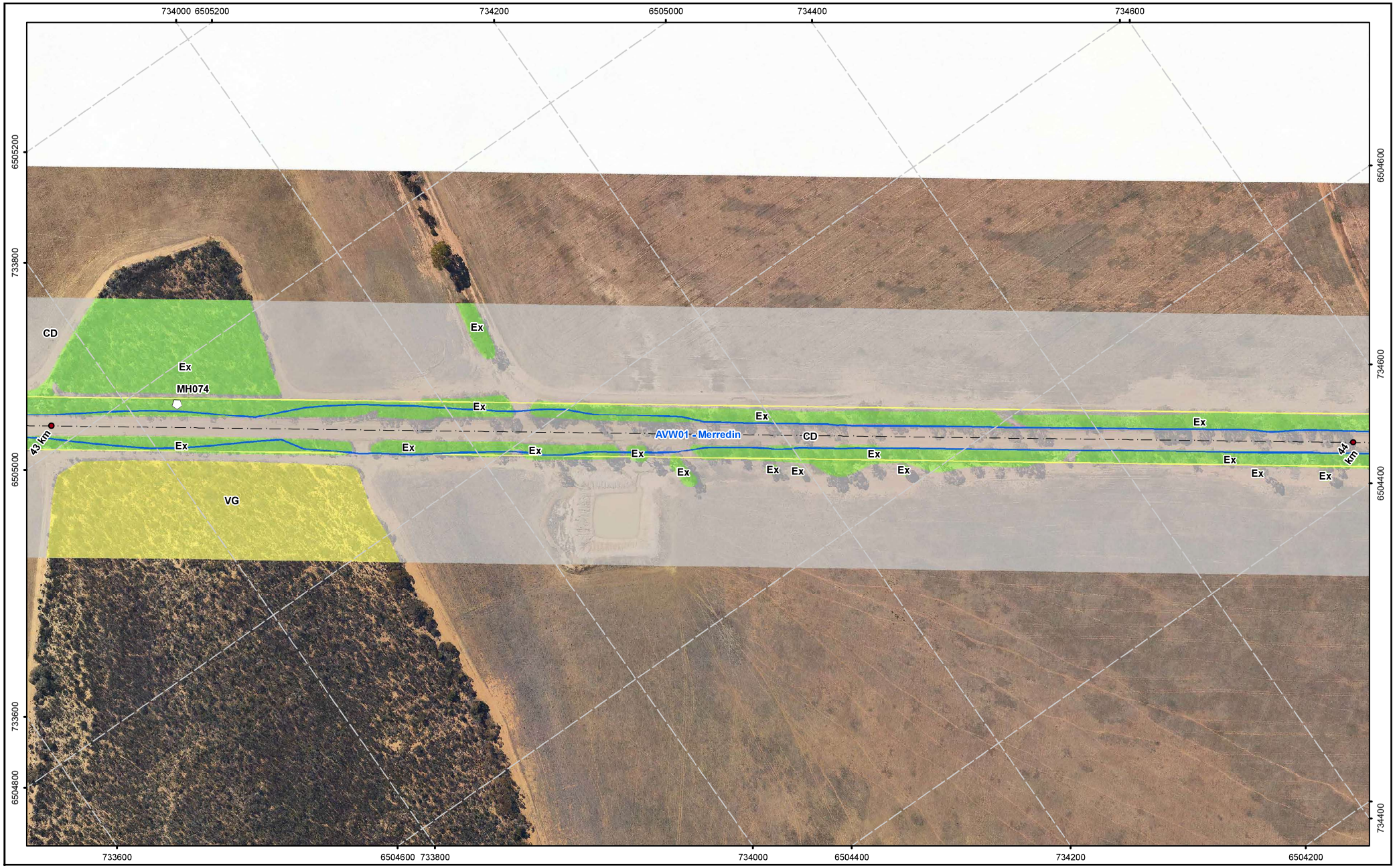
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 42km to Chn 43km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 43km to Chn 44km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline — Previous Clearing Permit Boundary — CD - Completely Degraded — Ex - Excellent
Biogeographic Region — Cadastre — VG - Very Good

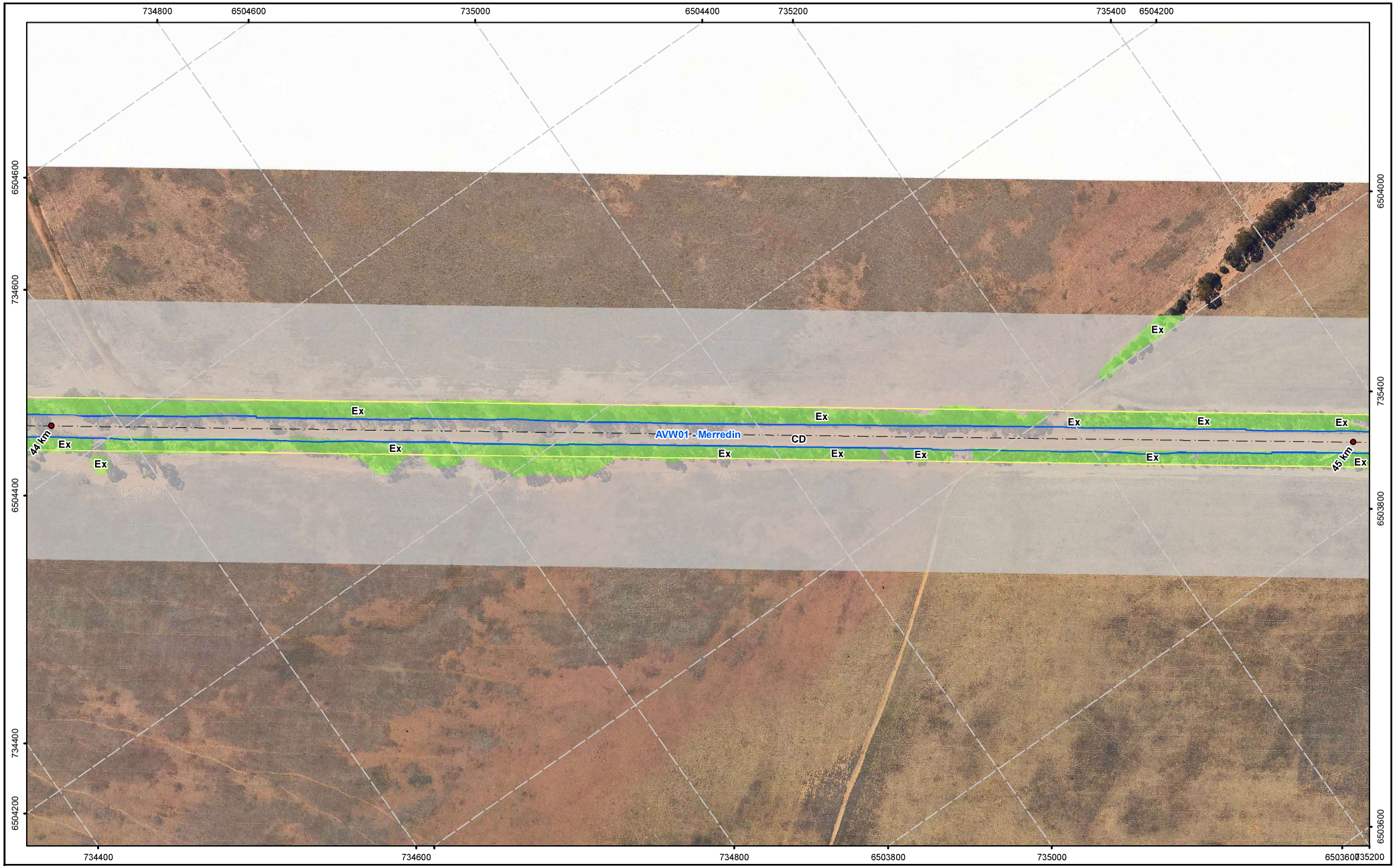
0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 43km to Chn 44km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 44km to Chn 45km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

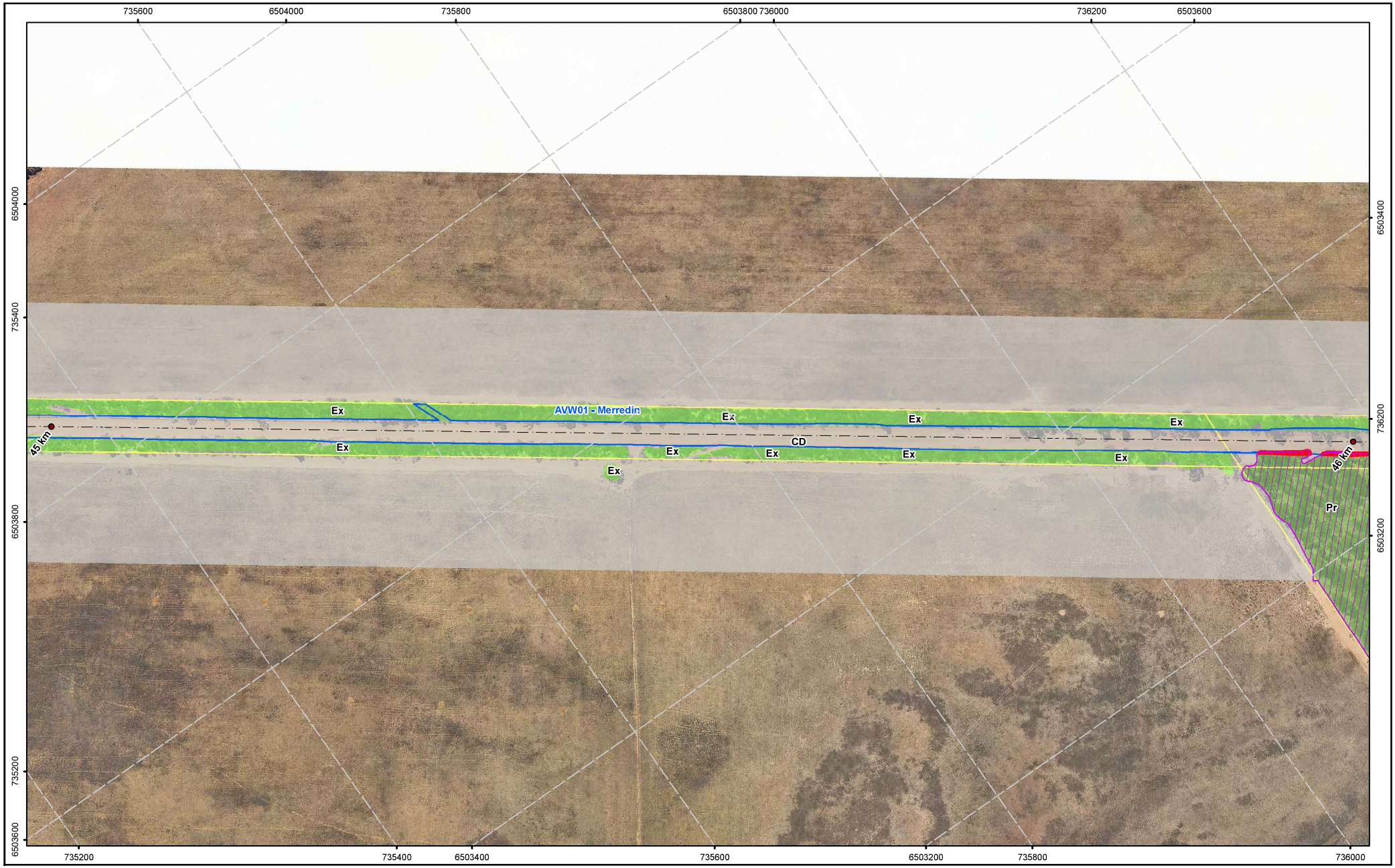
Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Ex - Excellent
Biogeographic Region
Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 44km to Chn 45km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 45km to Chn 46km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- TEC clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- Ex - Excellent
- Likely TEC

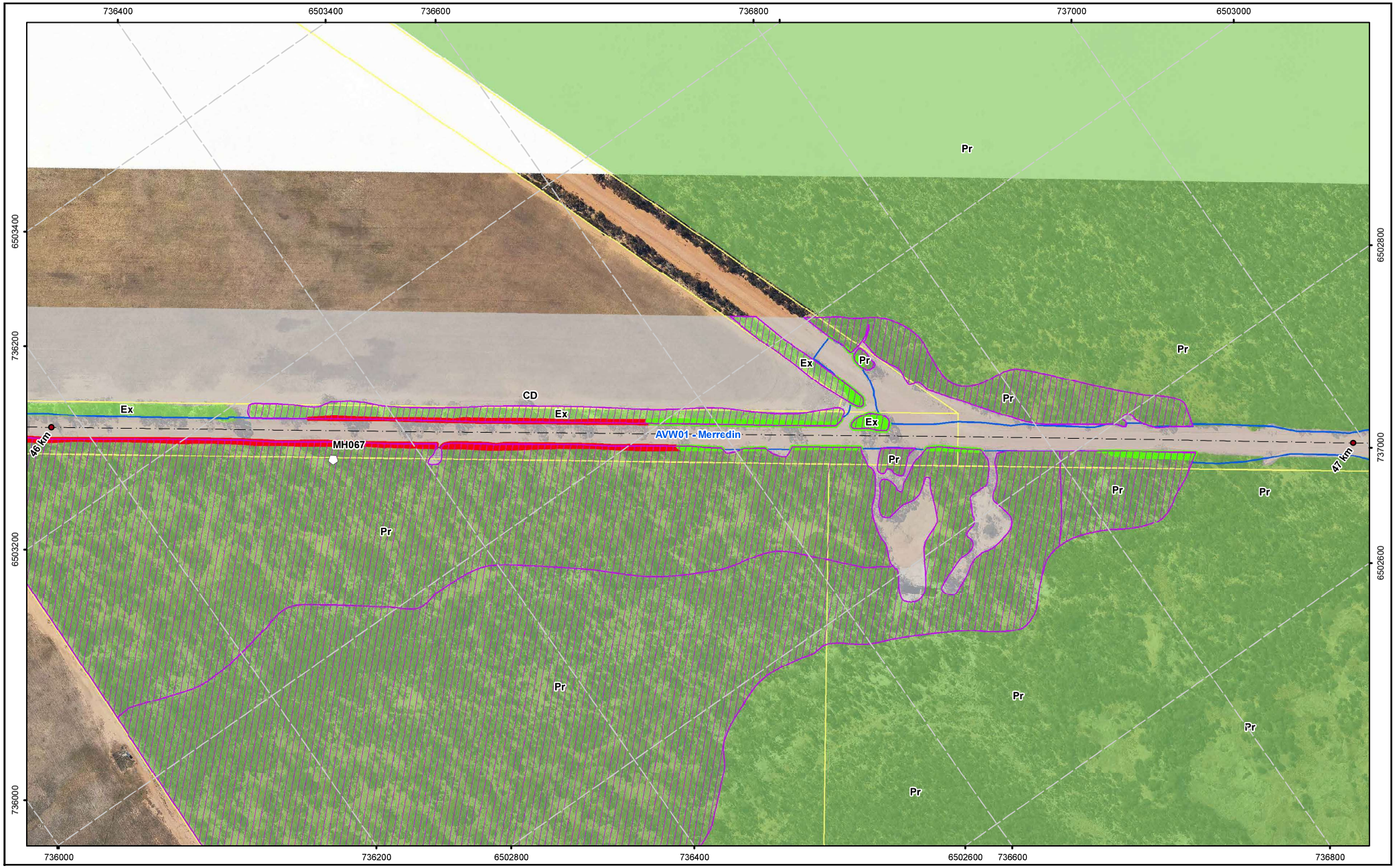
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 45km to Chn 46km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 46km to Chn 47km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- TEC clearing footprint
- Cadastre
- Ex - Excellent
- Likely TEC

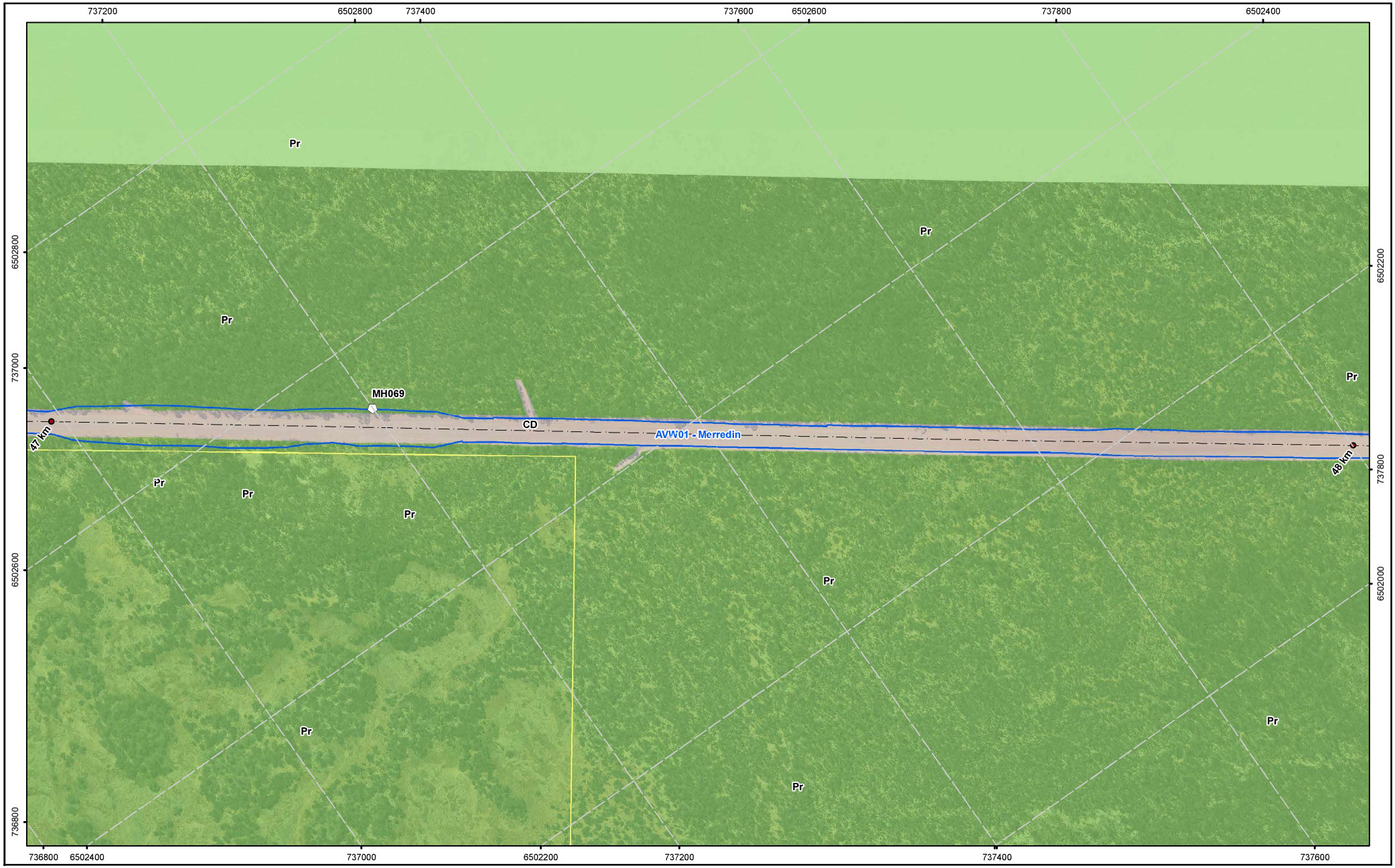
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 46km to Chn 47km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 47km to Chn 48km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

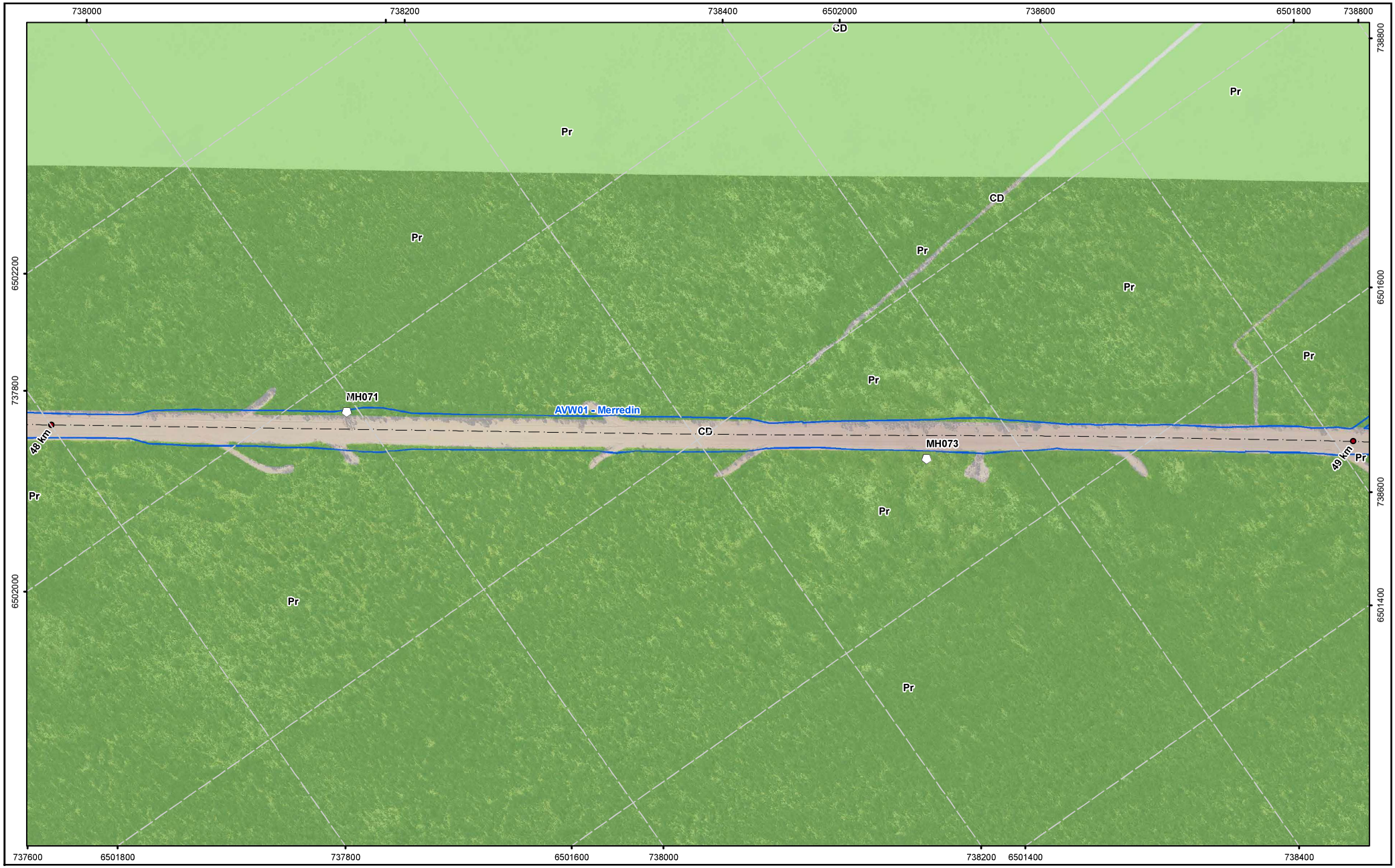
Legend
Quadrat · - Road Centreline Previous Clearing Permit Boundary CD - Completely Degraded Pr - Pristine
Biogeographic Region Cadastre

0 100 m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 47km to Chn 48km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 48km to Chn 49km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

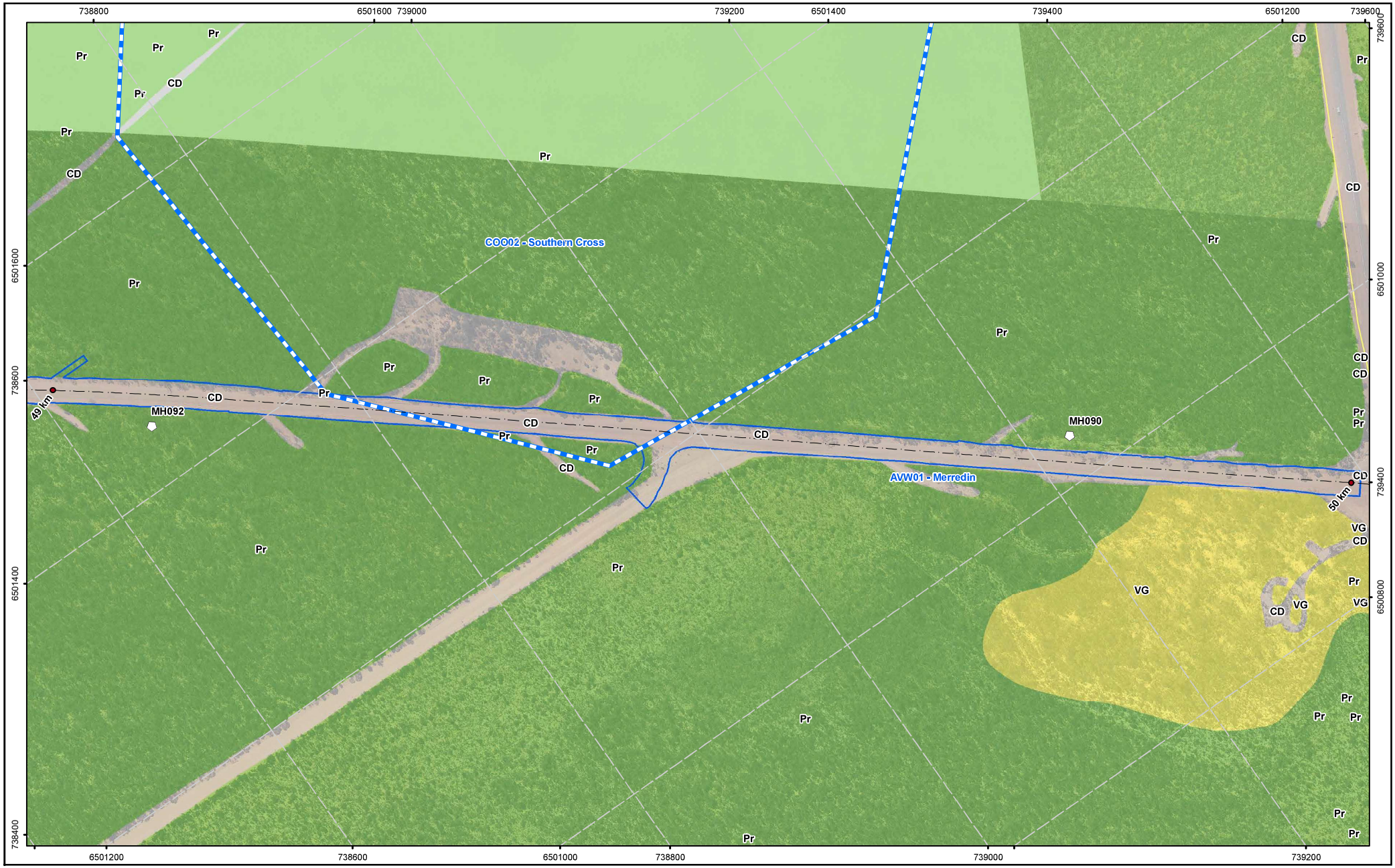
Legend
Quadrat - Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 48km to Chn 49km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 49km to Chn 50km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline — Previous Clearing Permit Boundary — CD - Completely Degraded — Pr - Pristine
Biogeographic Region — Cadastre — VG - Very Good

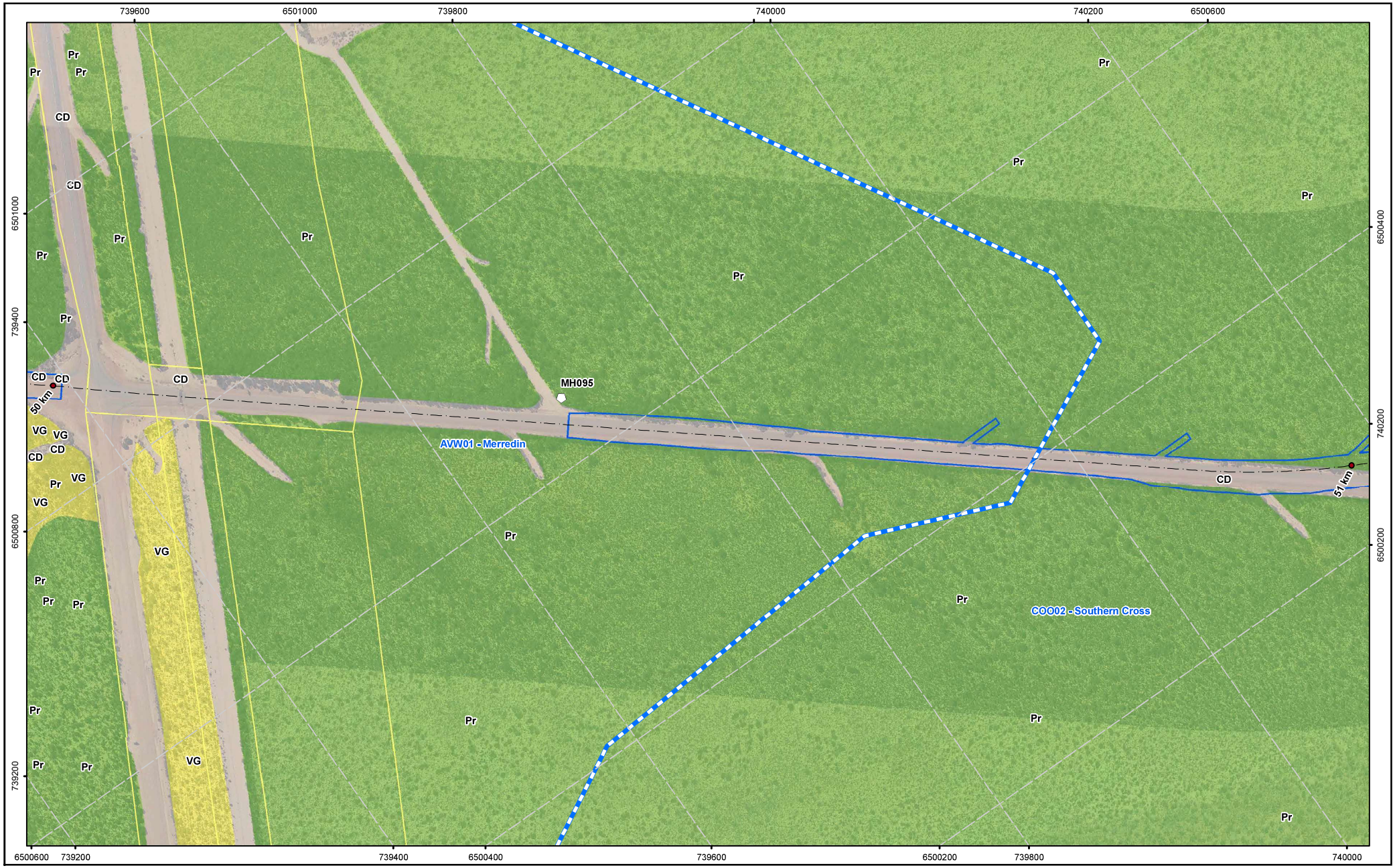
0 100 m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 49km to Chn 50km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 50km to Chn 51km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline — Previous Clearing Permit Boundary — CD - Completely Degraded — Pr - Pristine
Biogeographic Region — Cadastre — VG - Very Good

0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 50km to Chn 51km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 51km to Chn 52km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
Quadrat - Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
Likely TEC

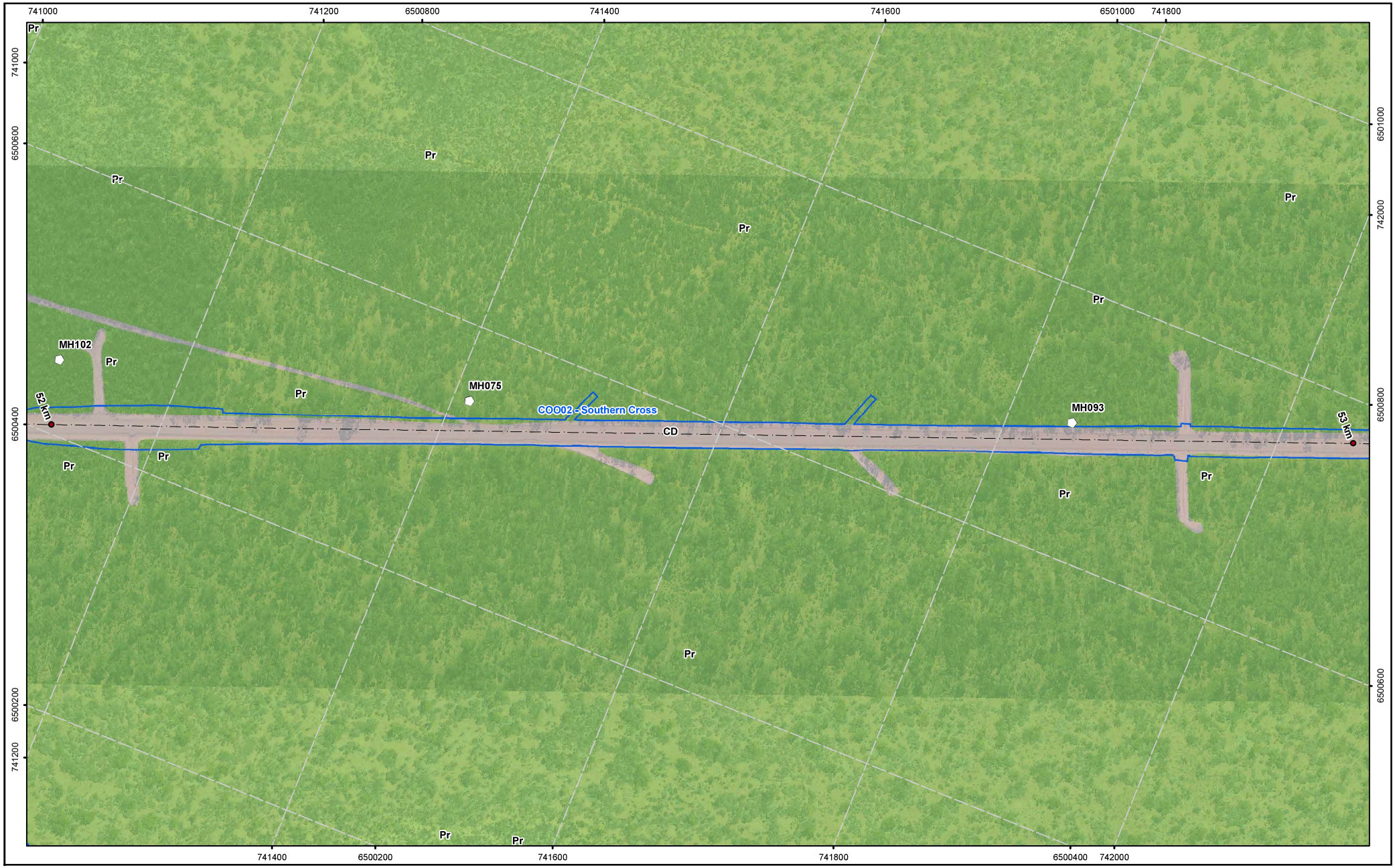
N

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 51km to Chn 52km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 52km to Chn 53km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
Likely TEC

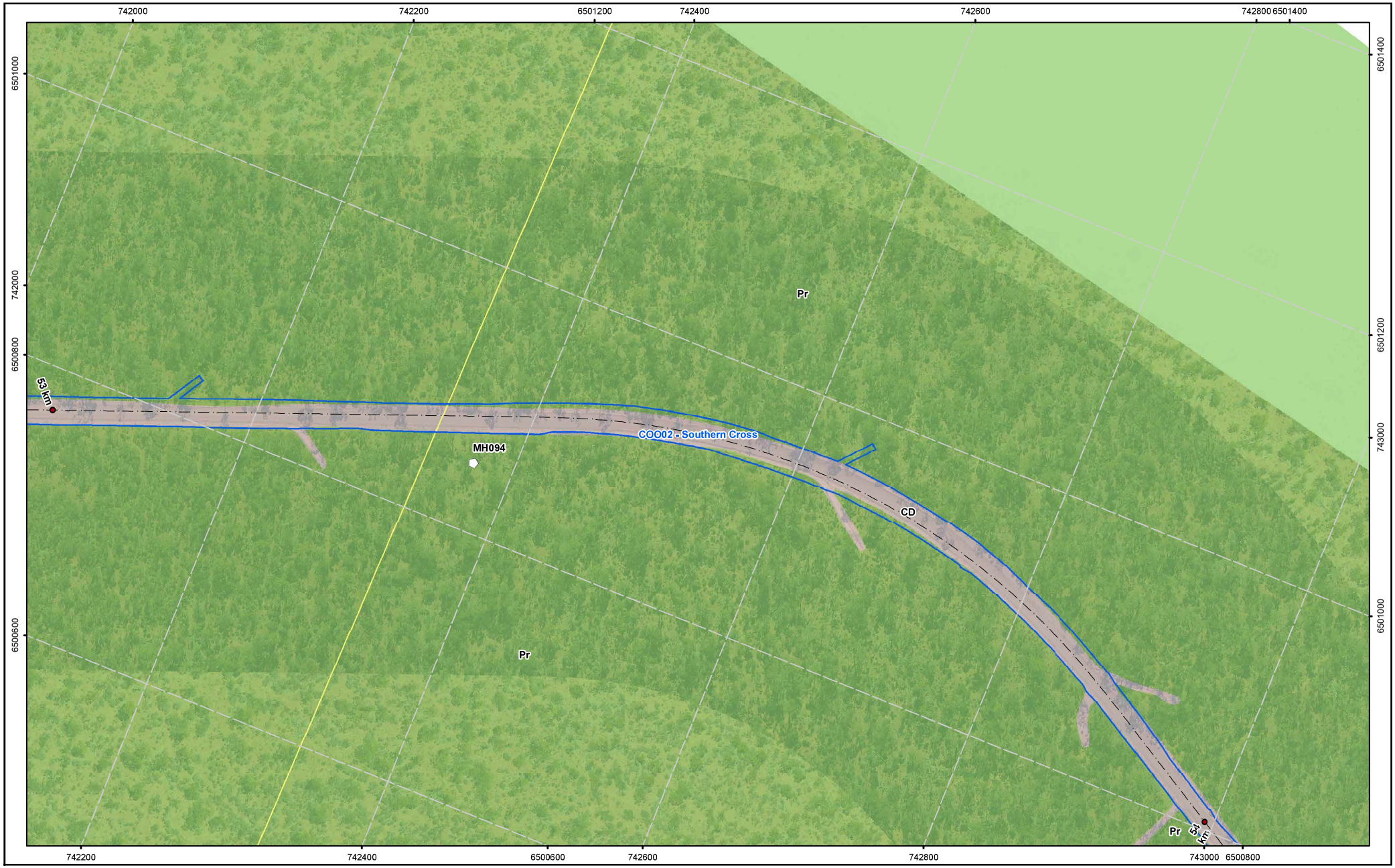
N

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 52km to Chn 53km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 53km to Chn 54km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
Quadrat - Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 53km to Chn 54km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 54km to Chn 55km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

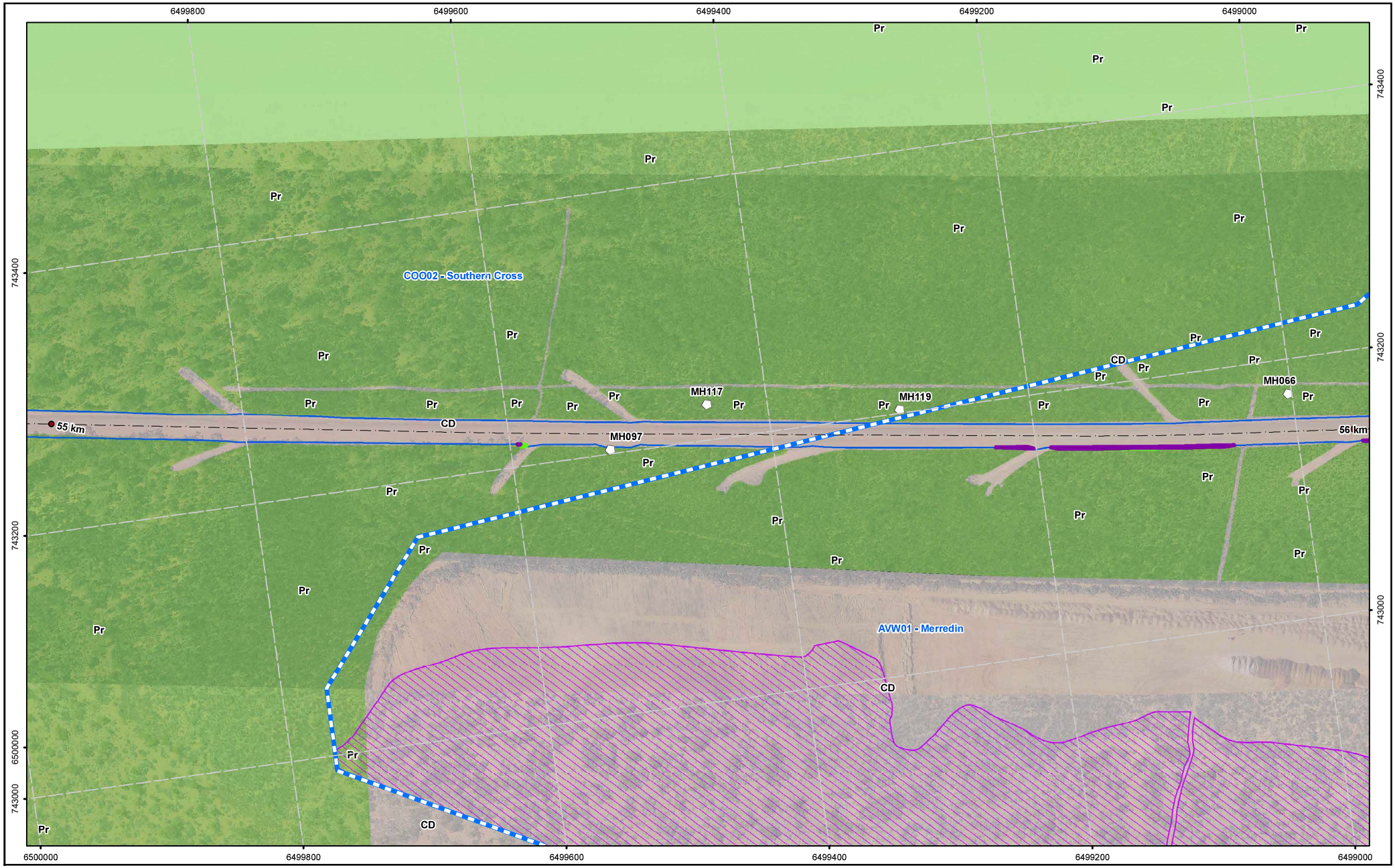
Legend
Quadrat - Road Centreline Previous Clearing Permit Boundary CD - Completely Degraded Pr - Pristine
Biogeographic Region Cadastre

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 54km to Chn 55km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 55km to Chn 56km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Other native vegetation clearing footprint
- Cadastre
- Likely TEC

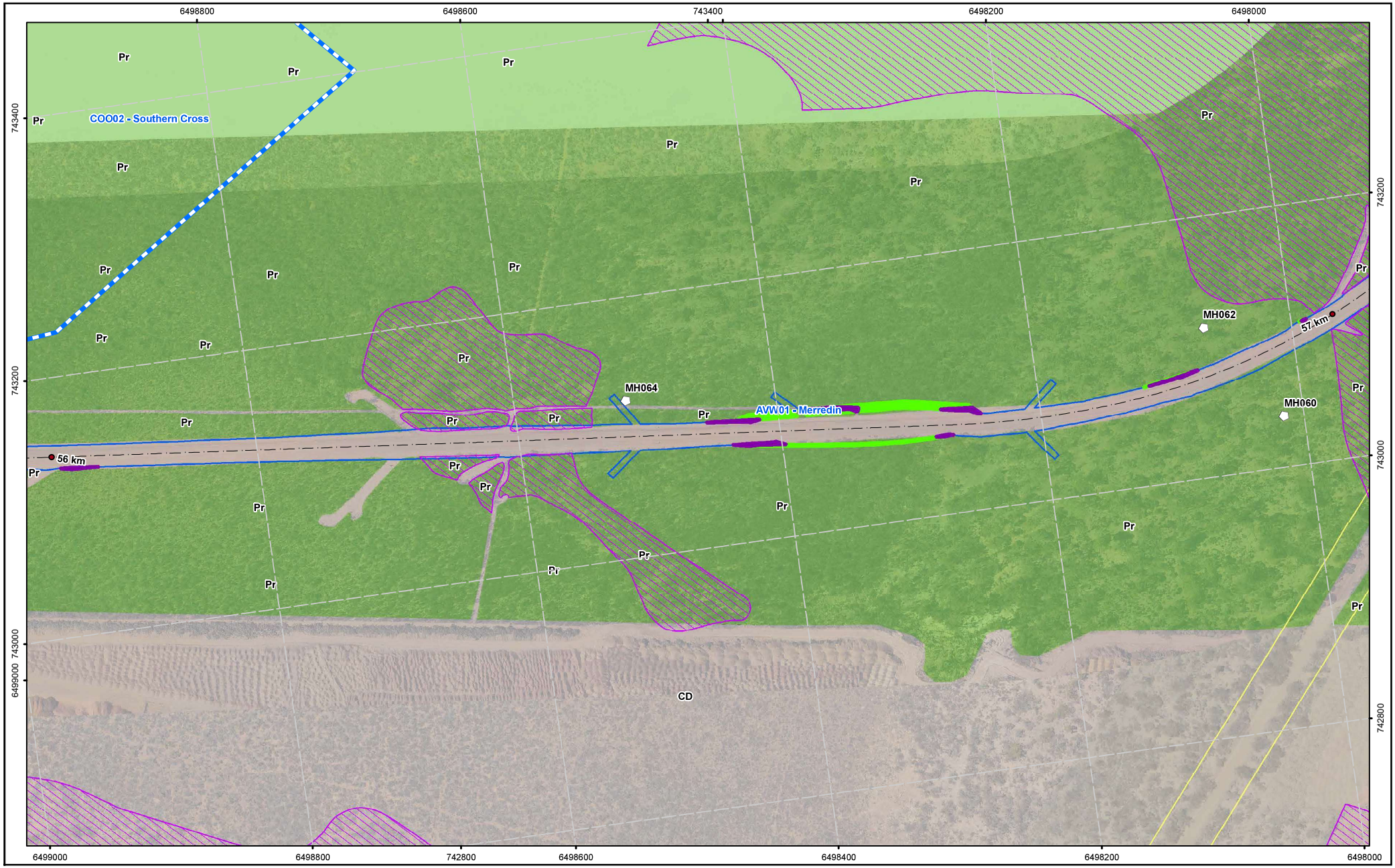
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 55km to Chn 56km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 56km to Chn 57km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline · Previously cleared · Previous Clearing Permit Boundary · CD - Completely Degraded · Pr - Pristine
Biogeographic Region · Other native vegetation clearing footprint · Cadastre
Likely TEC

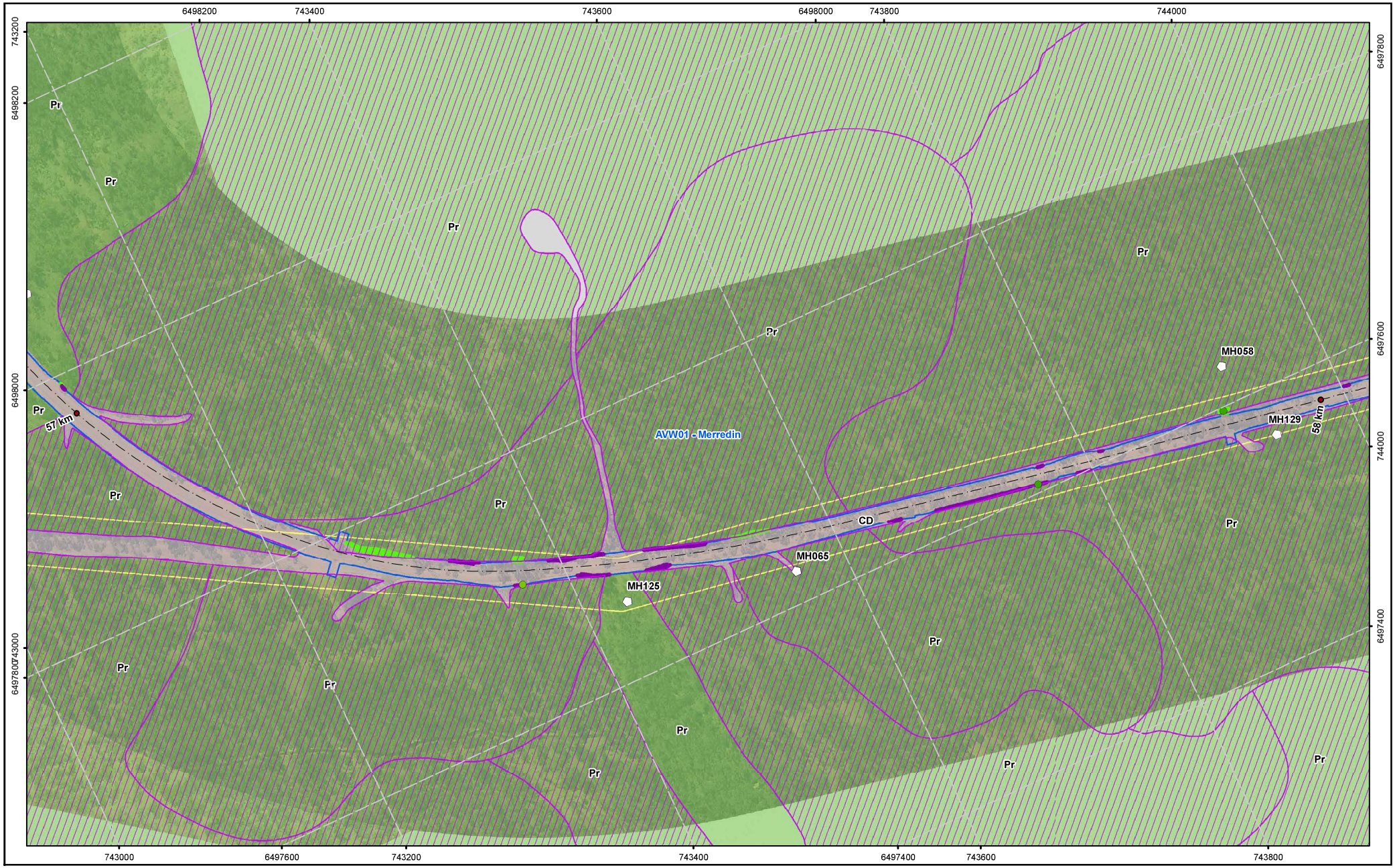
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 56km to Chn 57km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 57km to Chn 58km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Acacia concolorans, P2
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- Pr - Pristine

N

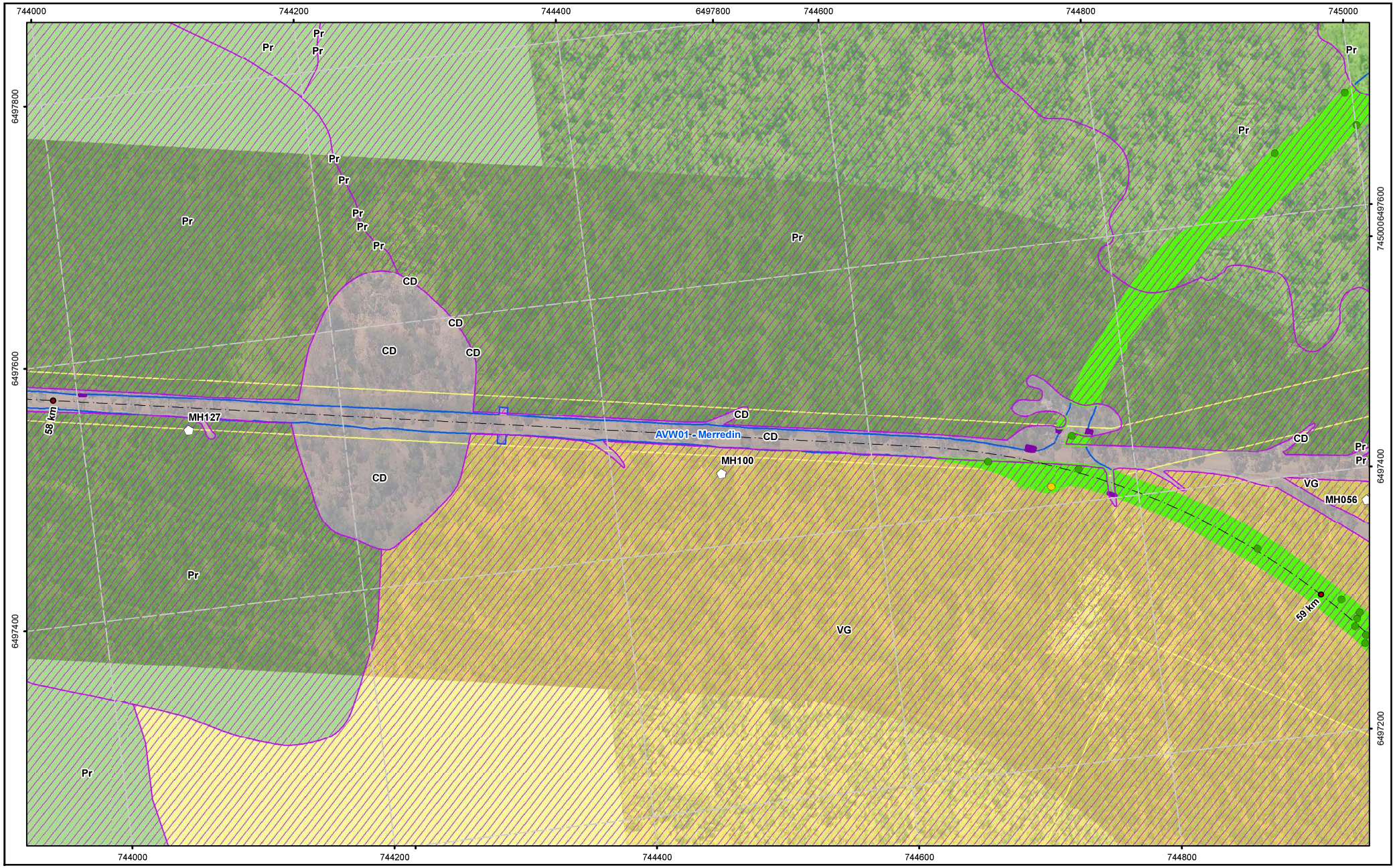
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 57km to Chn 58km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Parker Range Road - Chn 58km to Chn 59km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Eutaxia lasiocalyx, P2
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- VG - Very Good
- Pr - Pristine

N

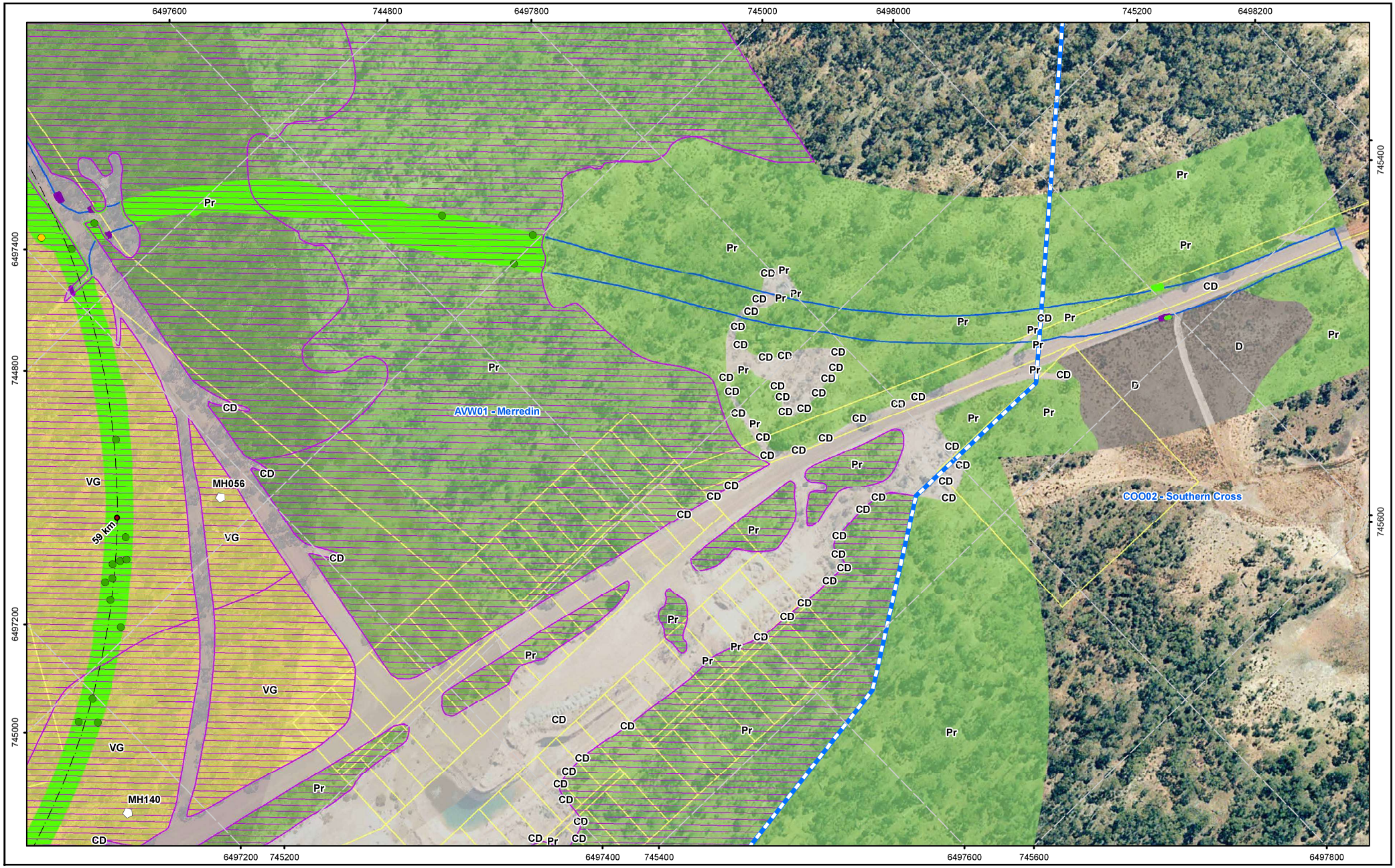
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Scale: 1:2,750
MGA94 (Zone 50)

Parker Range Road
Chn 58km to Chn 59km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Marvel Loch - Forrestonia Road Connection



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Eutaxia lasiocalyx, P2
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- D - Degraded
- VG - Very Good
- Pr - Pristine

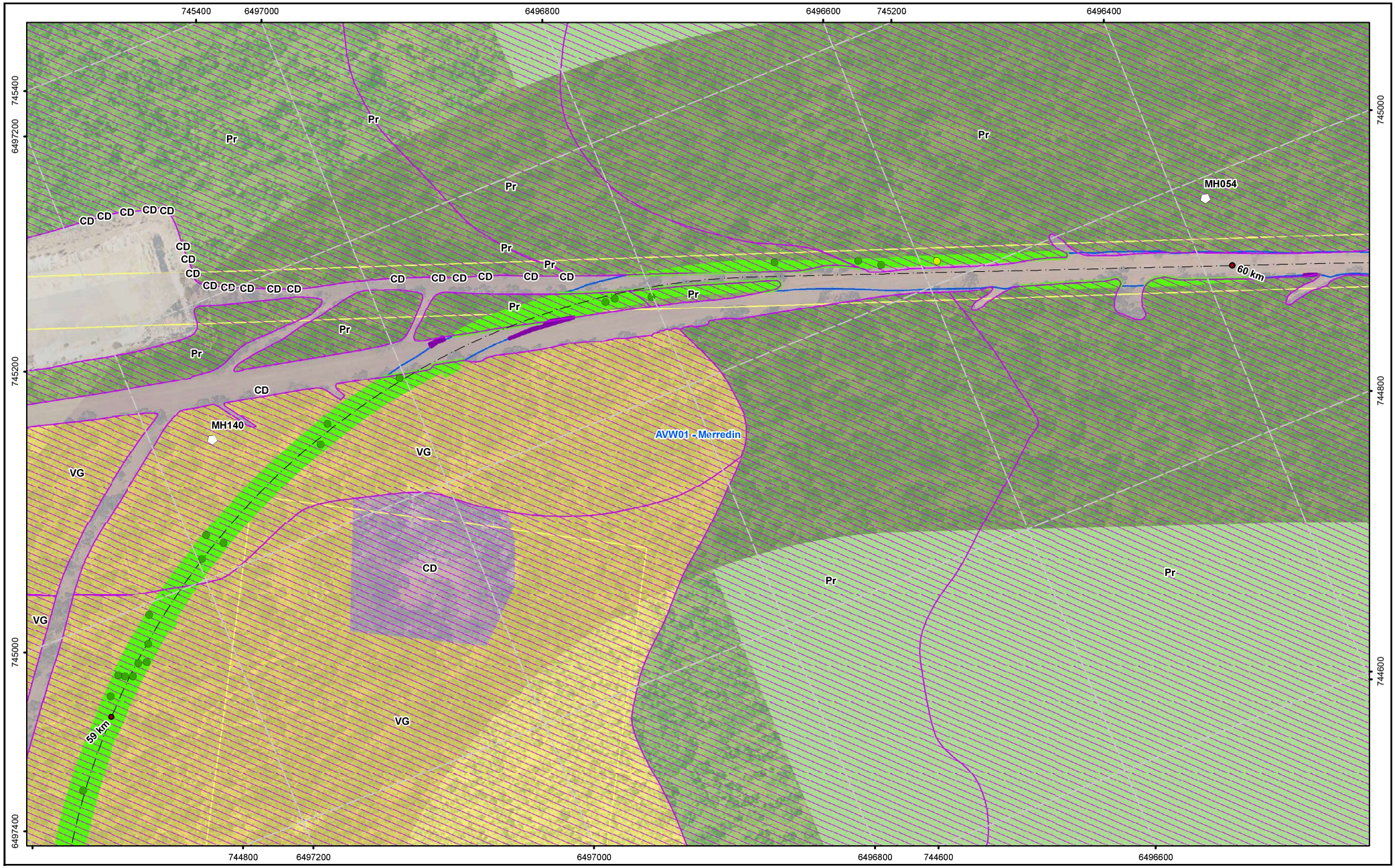
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Marvel Loch - Forrestonia Road Connection

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 59km to Chn 60km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Eucalyptus sp. Dunbar Road (D. Nicolle & M. French DN 5466), P1
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- Pr - Pristine
- VG - Very Good

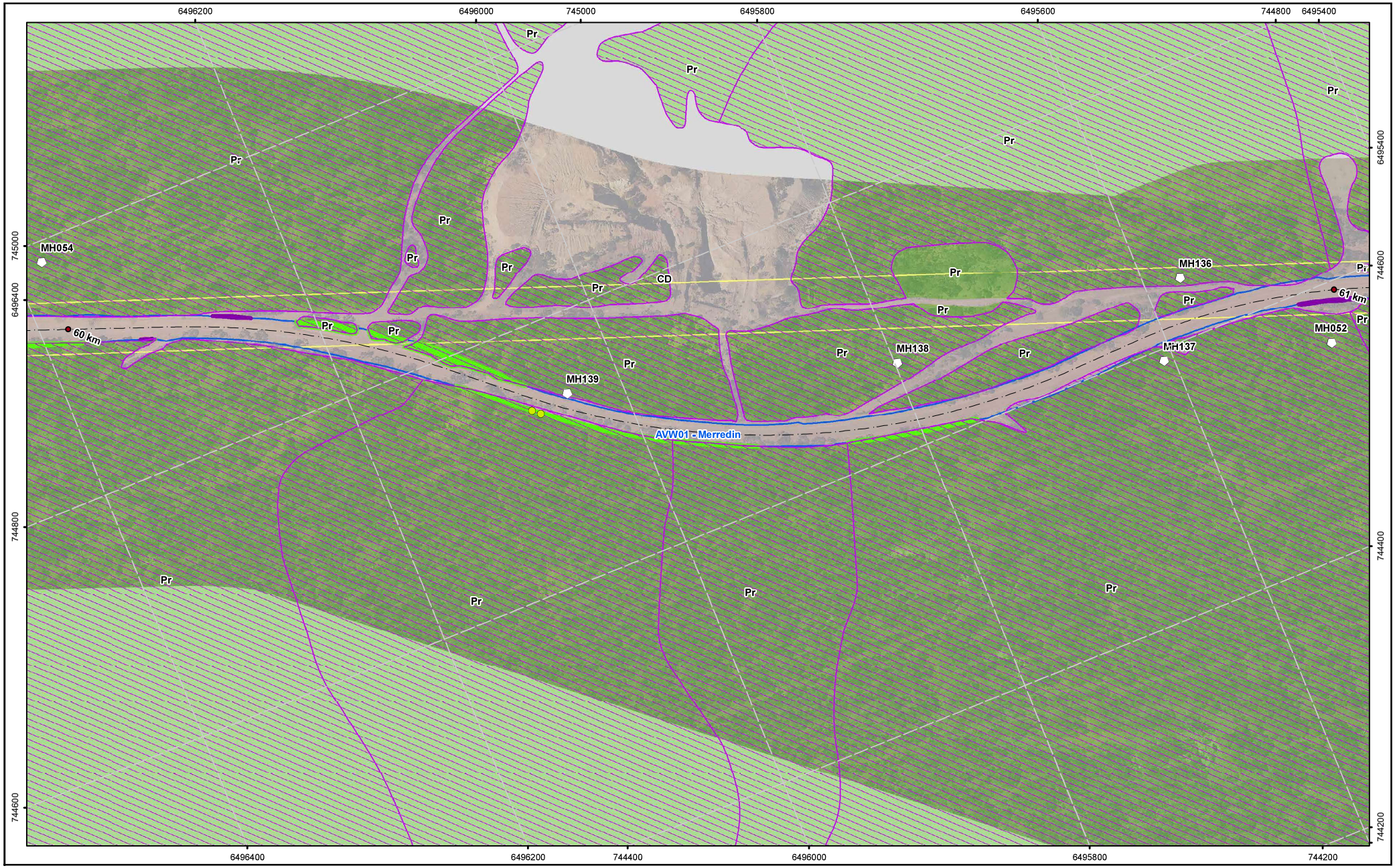
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 59km to Chn 60km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 60km to Chn 61km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Eucalyptus sp. Dunbar Road (D. Nicolle & M. French DN 5466), P1
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- Pr - Pristine

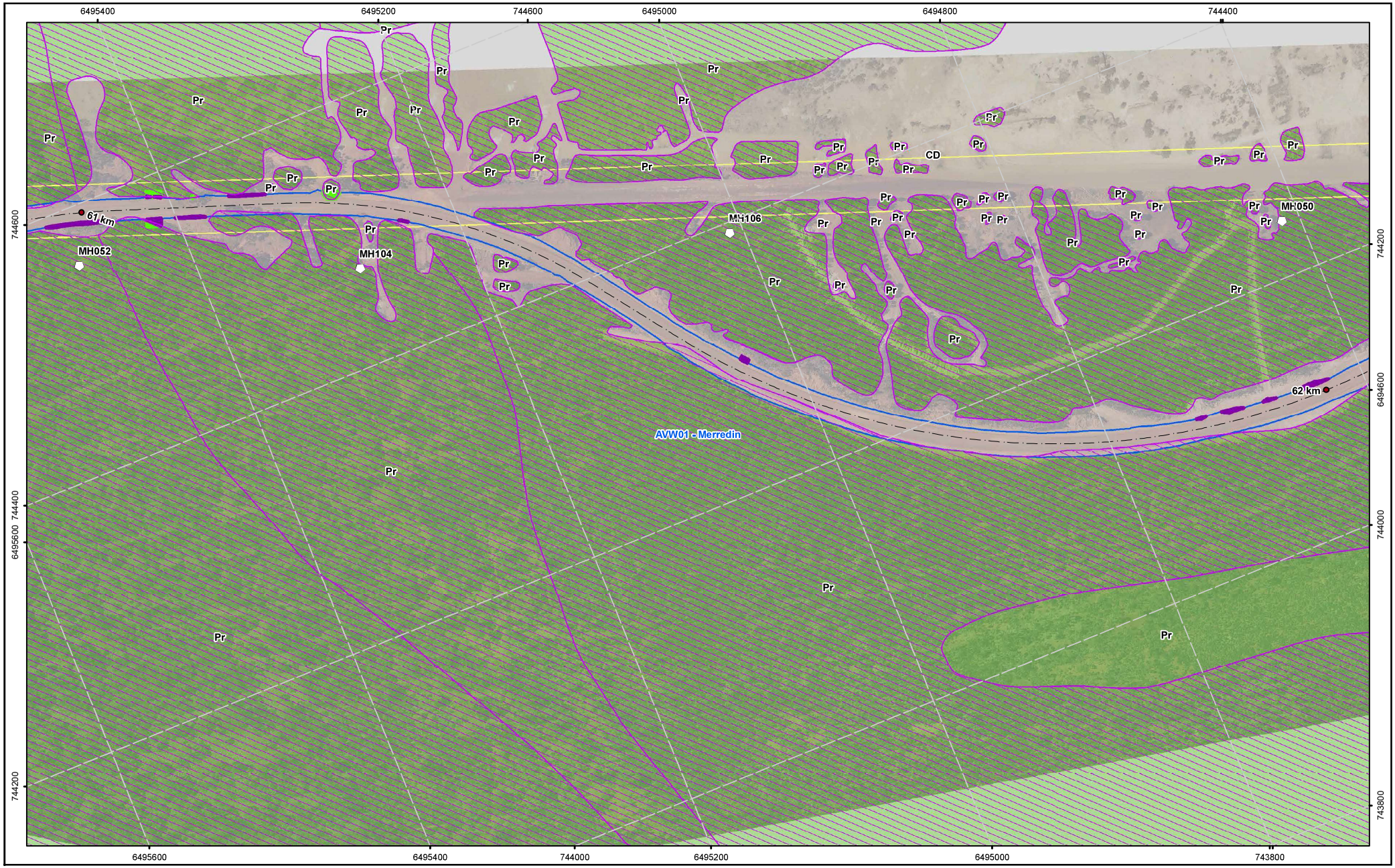
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 60km to Chn 61km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 61km to Chn 62km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Other native vegetation clearing footprint
- Cadastre
- Likely TEC

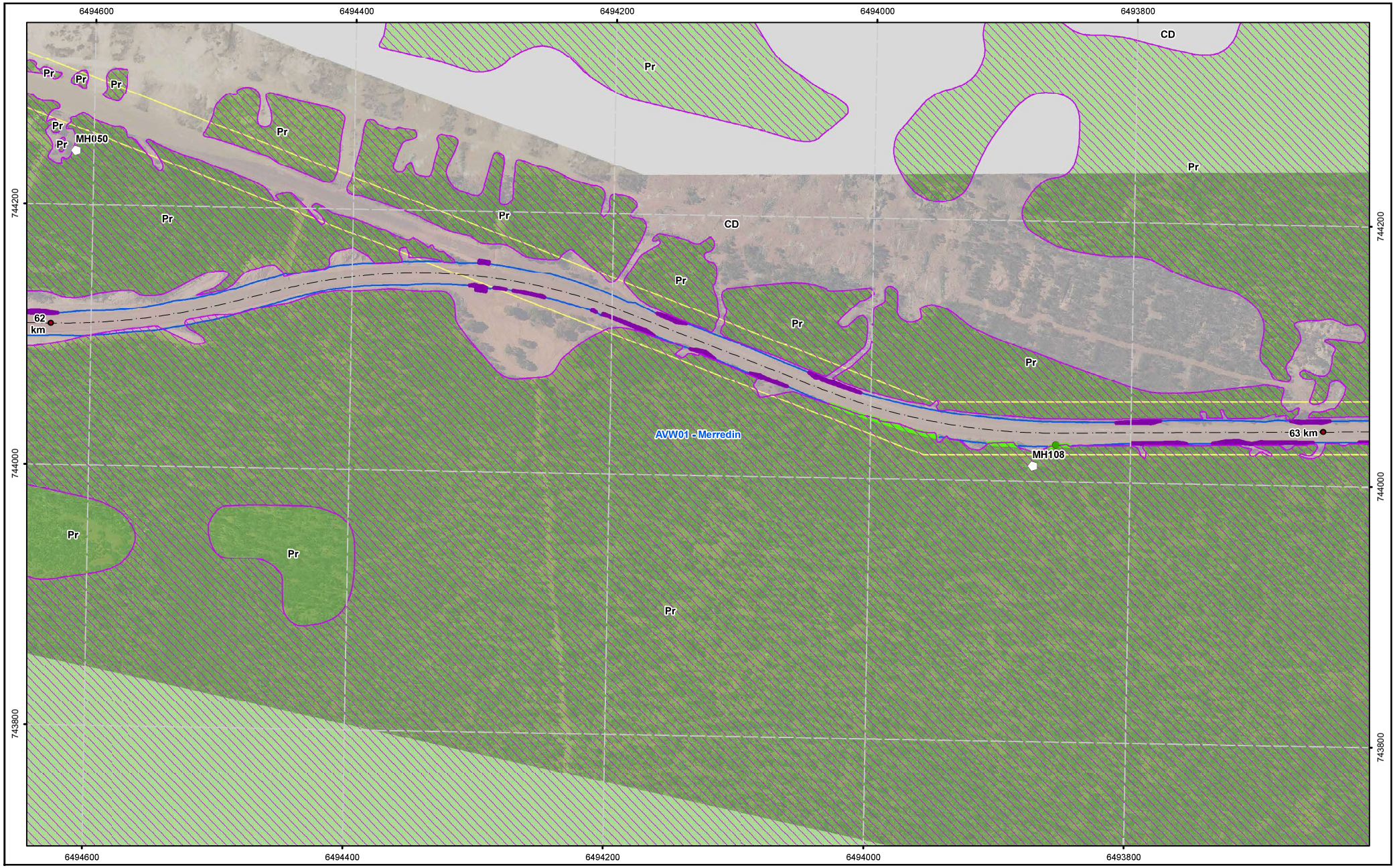
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 61km to Chn 62km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 62km to Chn 63km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Quadrat
- Biogeographic Region
- Other native vegetation clearing footprint
- Cadastre
- Likely TEC

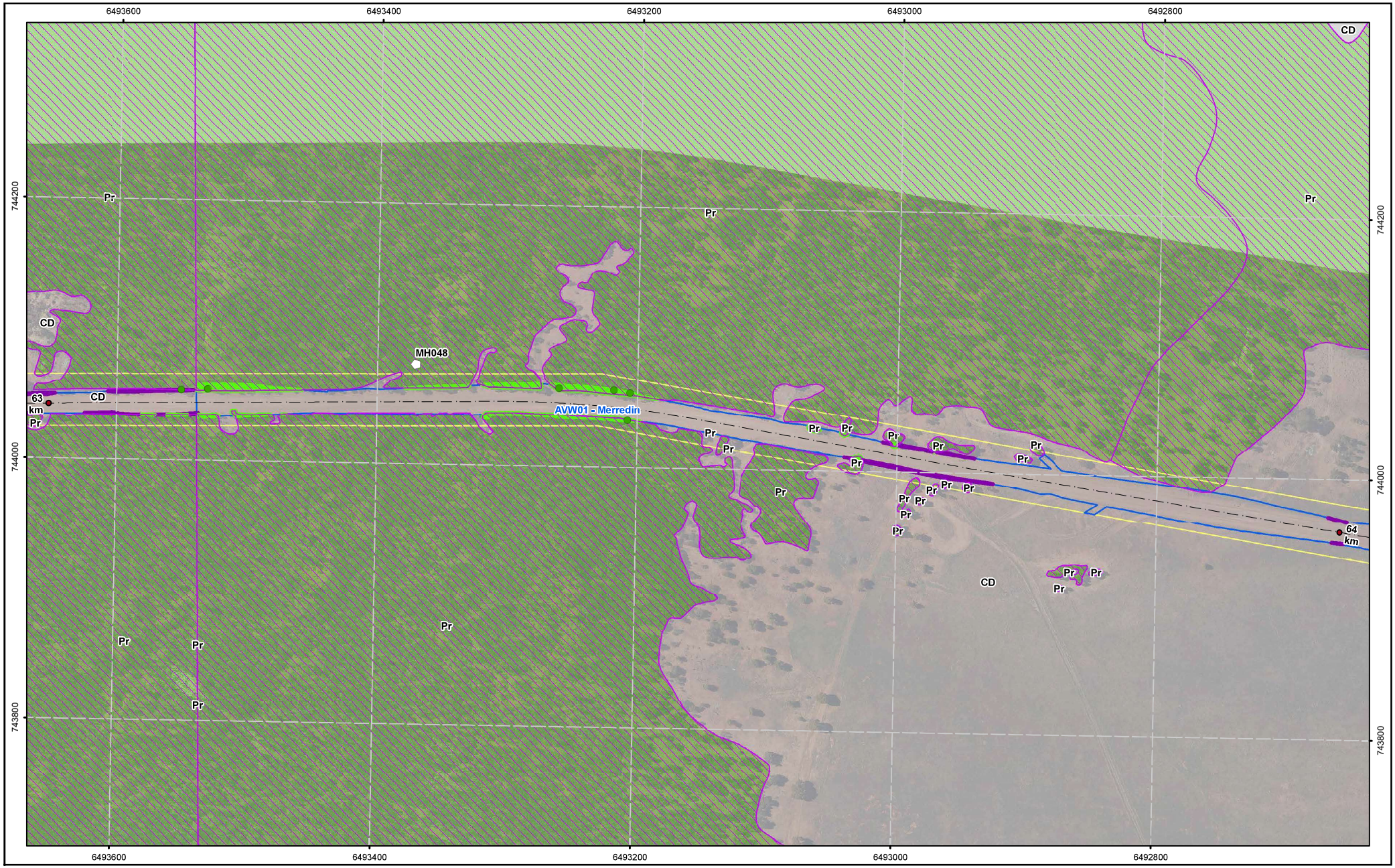
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 62km to Chn 63km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 63km to Chn 64km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- Pr - Pristine

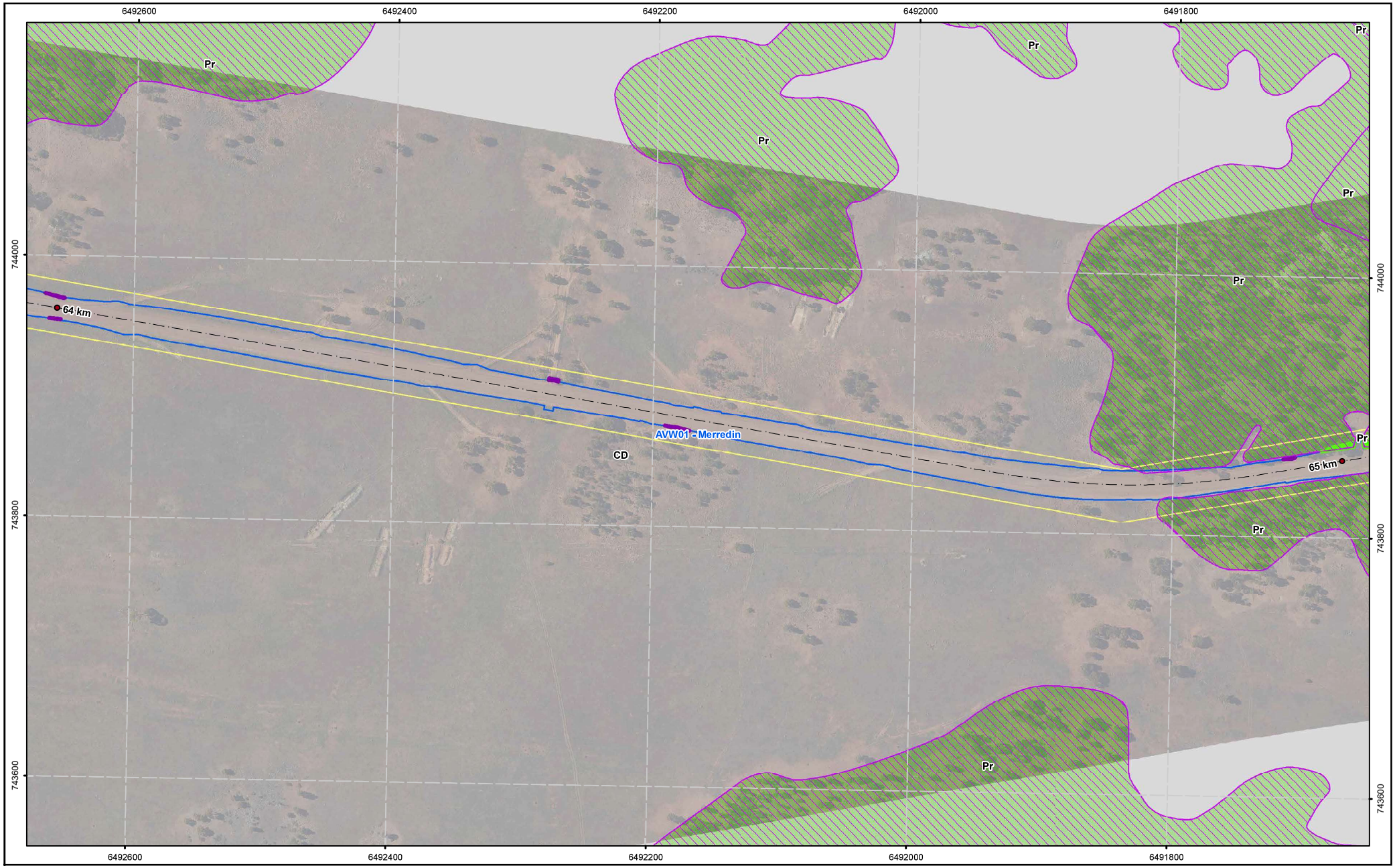
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 63km to Chn 64km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 64km to Chn 65km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

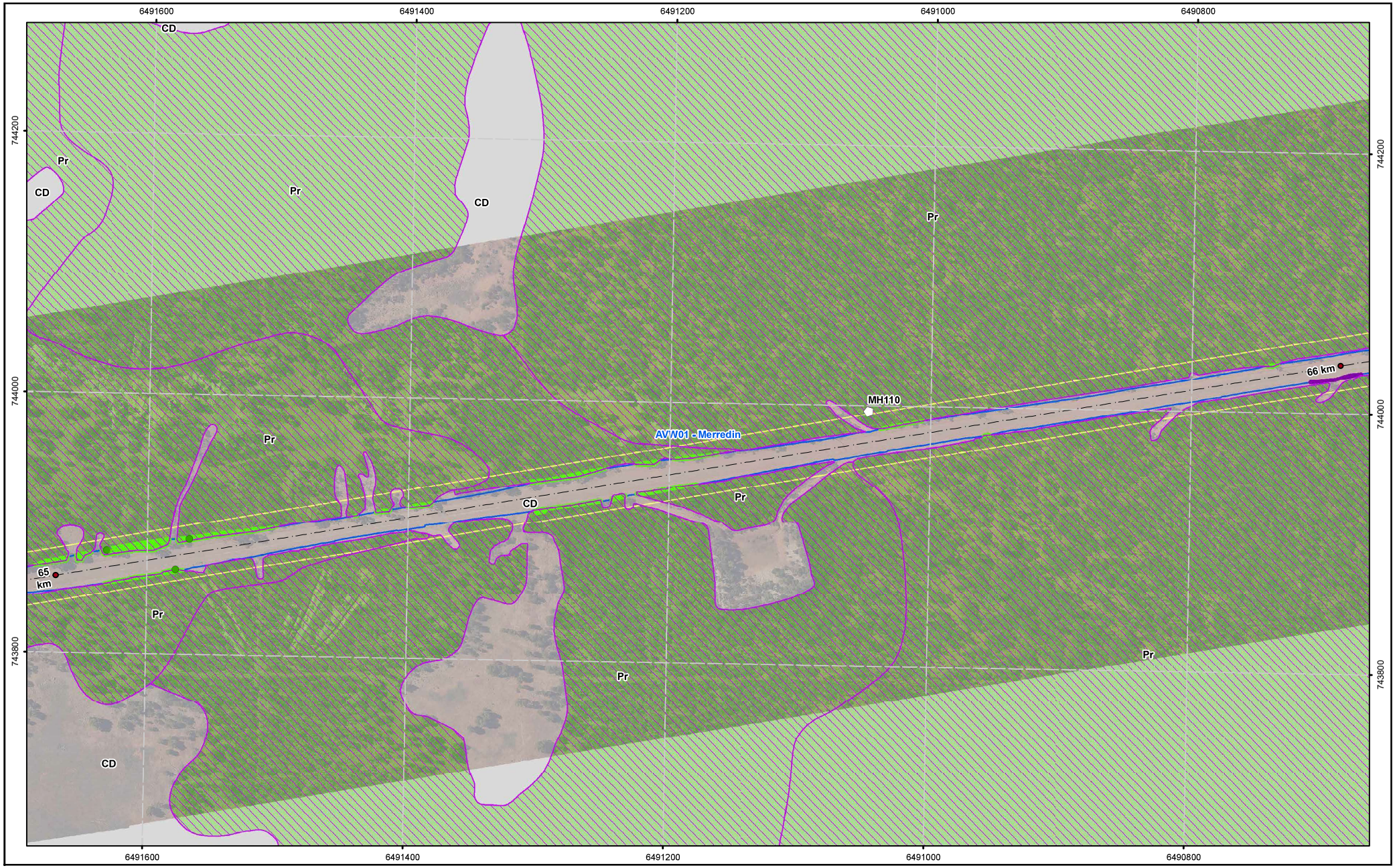
Legend
- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Other native vegetation clearing footprint
- Cadastre
- Likely TEC

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 64km to Chn 65km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 65km to Chn 66km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- Pr - Pristine

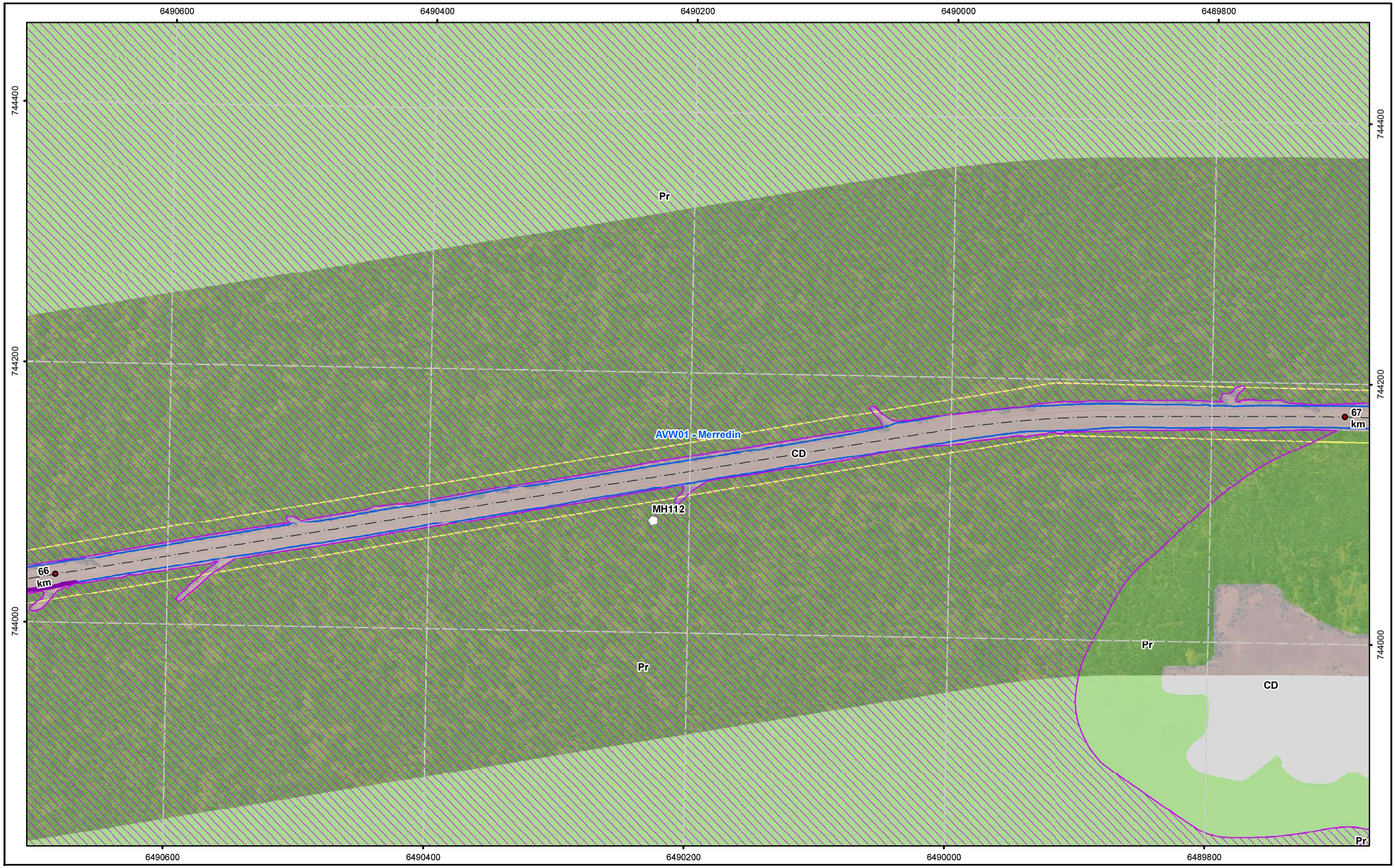
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 65km to Chn 66km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 66km to Chn 67km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

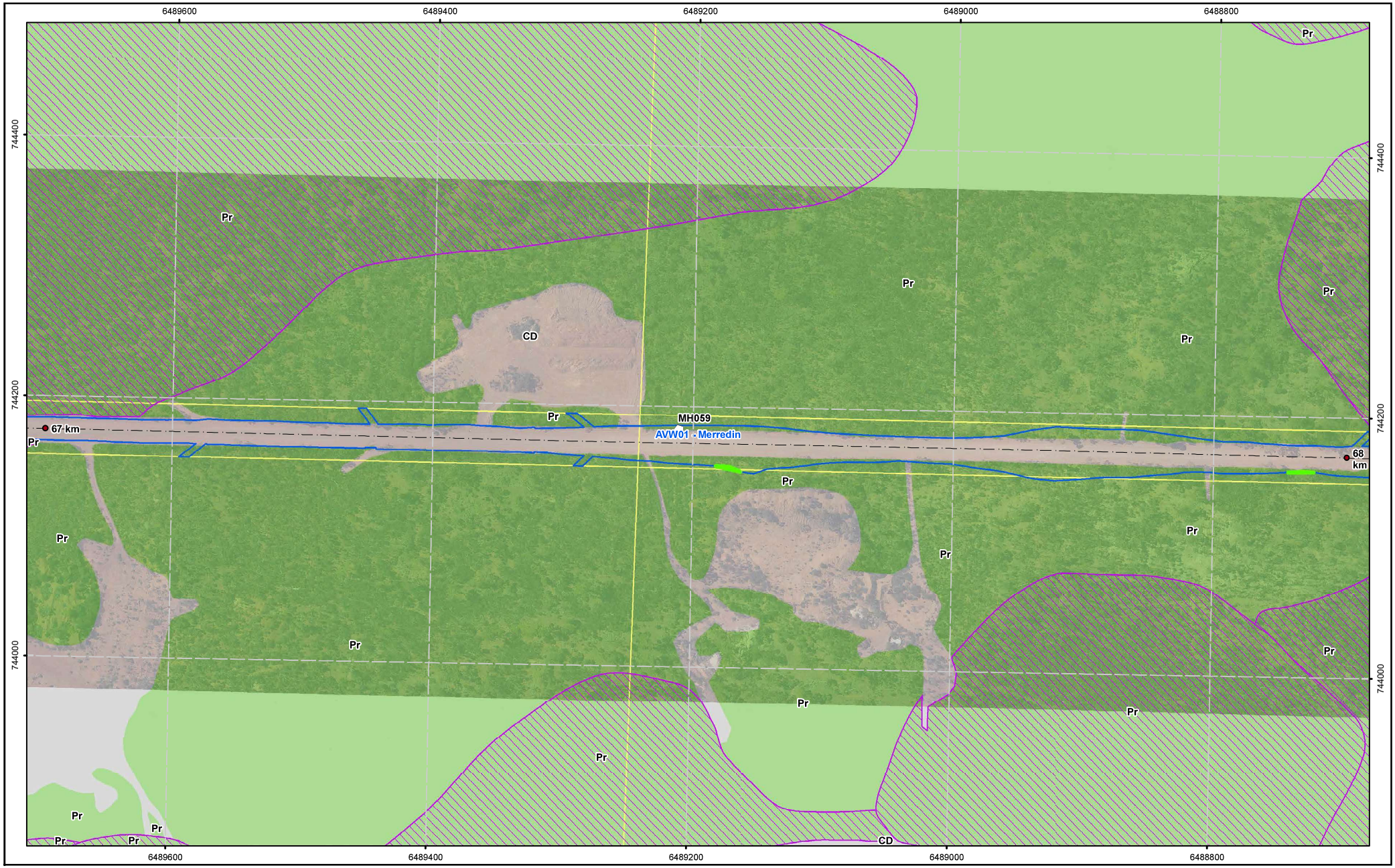
Legend
Quadrat
Road Centreline
Previously cleared
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
Likely TEC

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 66km to Chn 67km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 67km to Chn 68km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

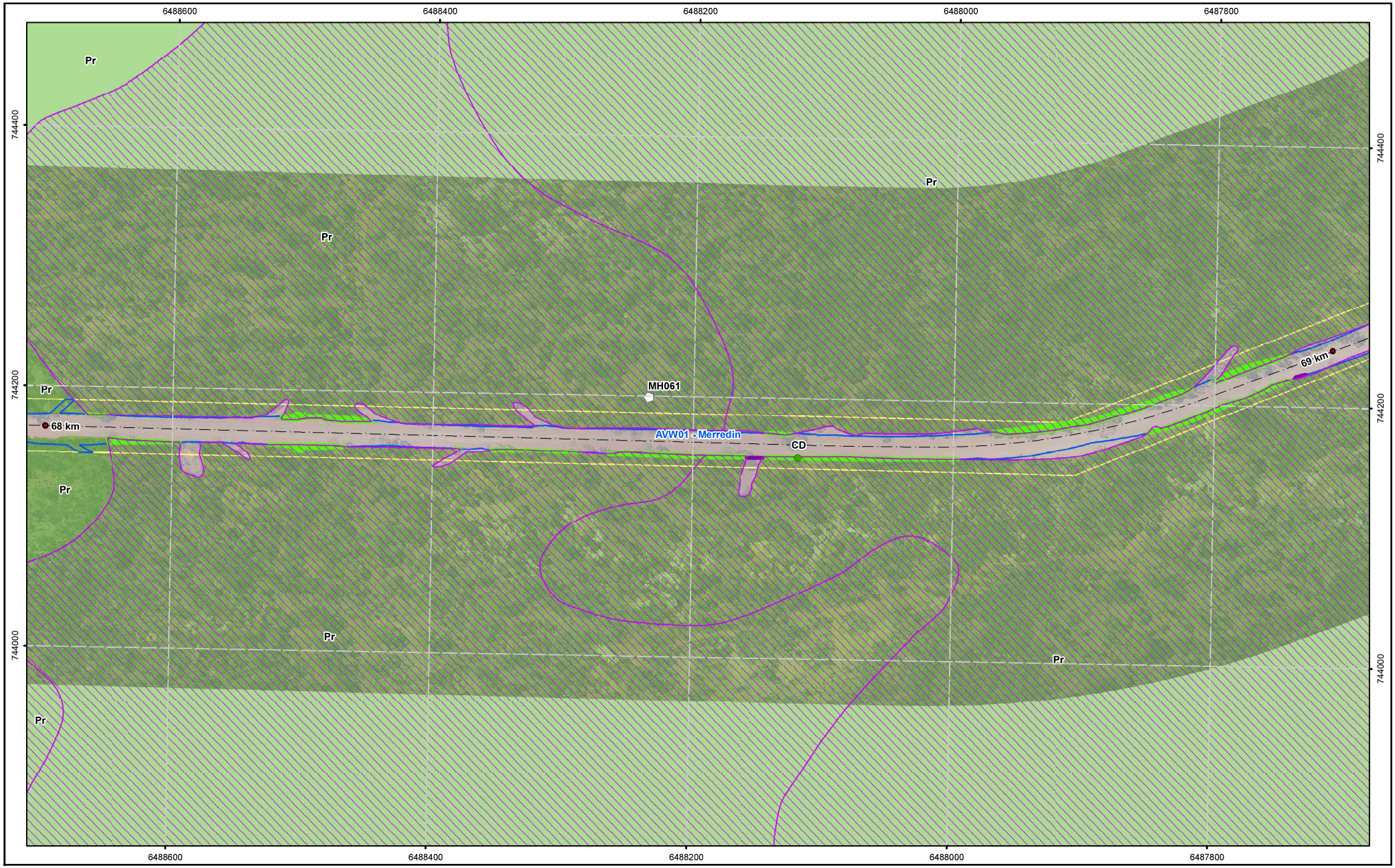
Legend
Quadrat
Road Centreline
Other native vegetation clearing footprint
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
Likely TEC

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 67km to Chn 68km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 68km to Chn 69km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- Pr - Pristine

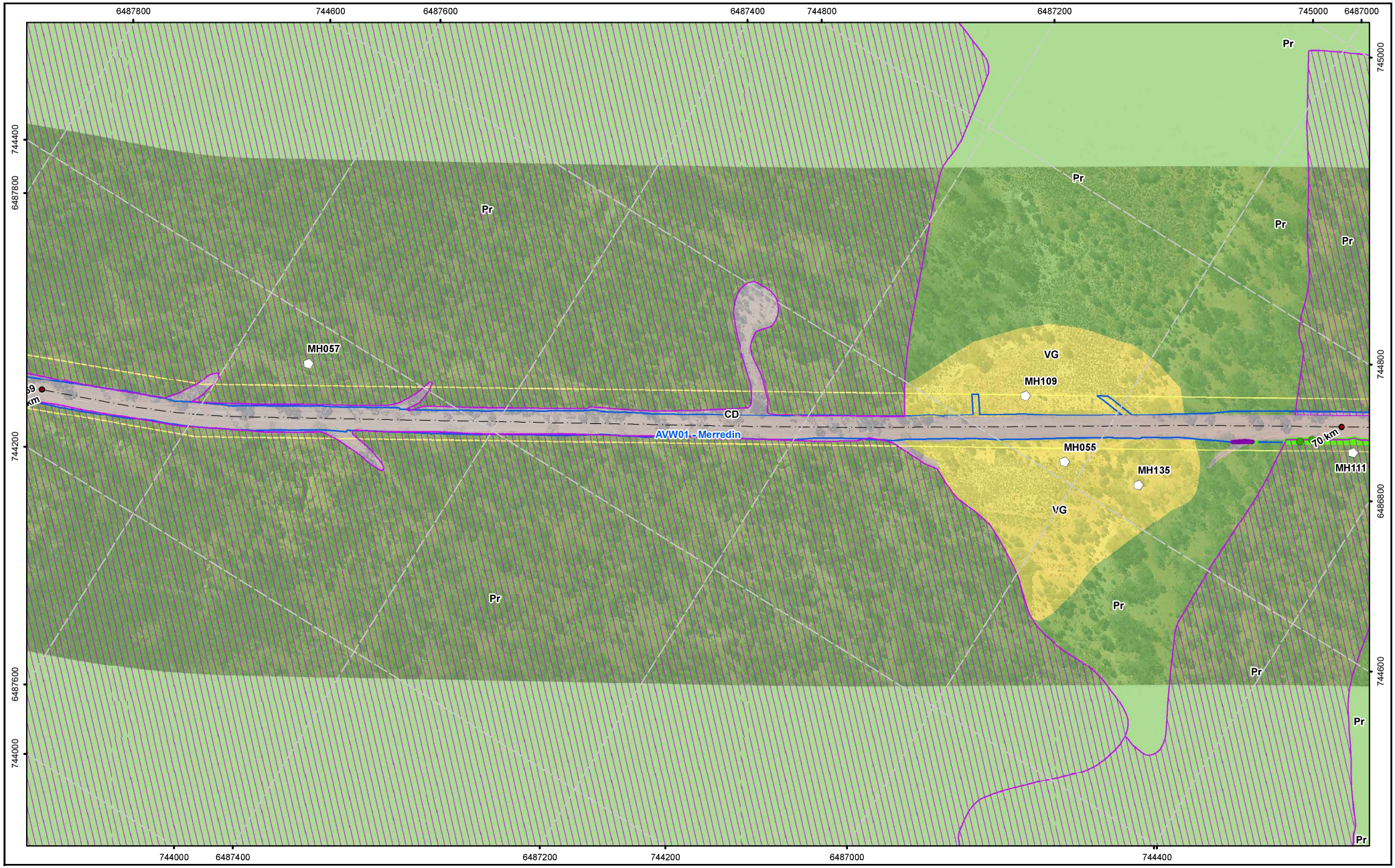
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 68km to Chn 69km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 69km to Chn 70km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- VG - Very Good
- Pr - Pristine

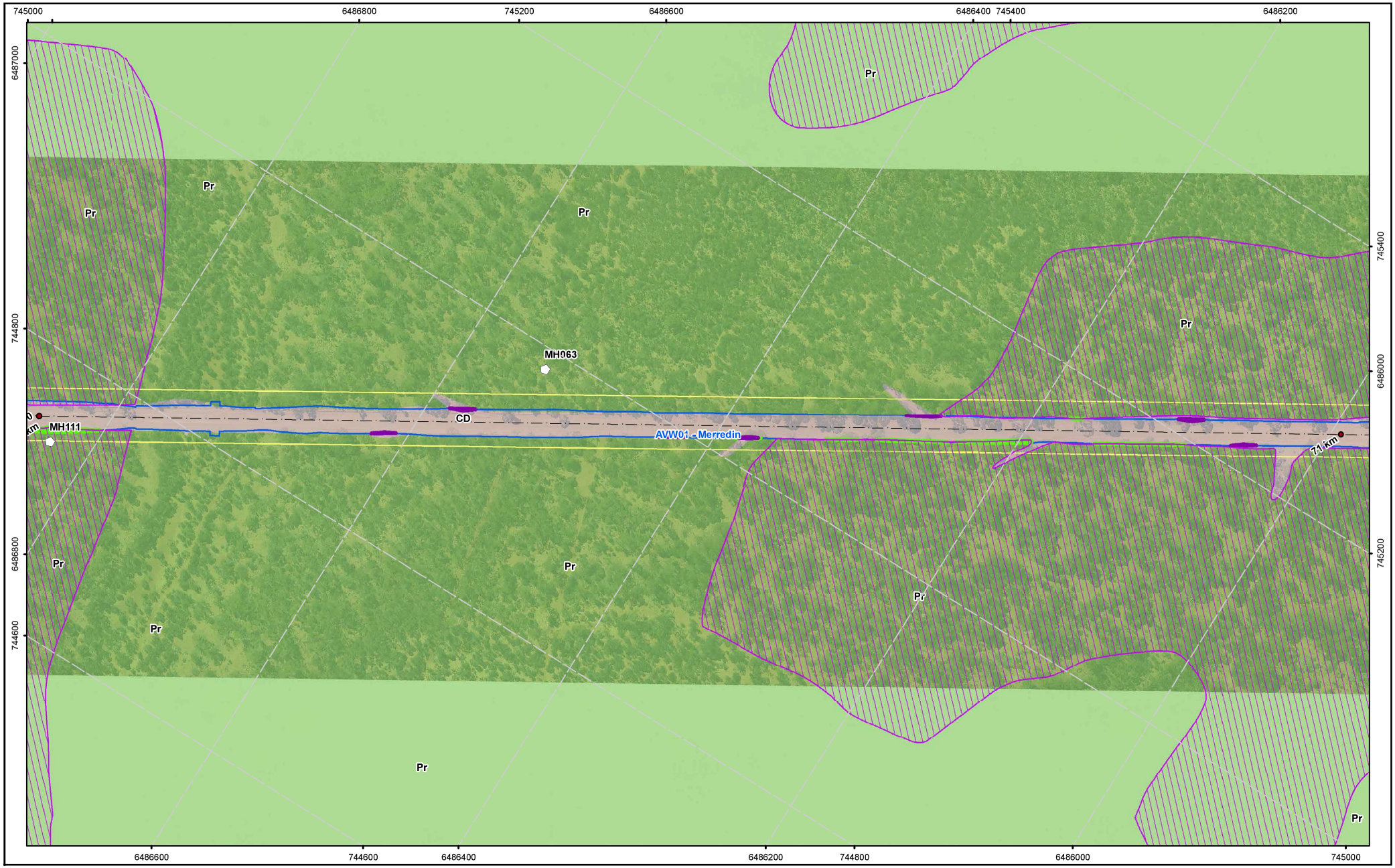
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 69km to Chn 70km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 70km to Chn 71km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline · Previously cleared · Previous Clearing Permit Boundary · CD - Completely Degraded · Pr - Pristine
Biogeographic Region · Other native vegetation clearing footprint · Cadastre
Likely TEC

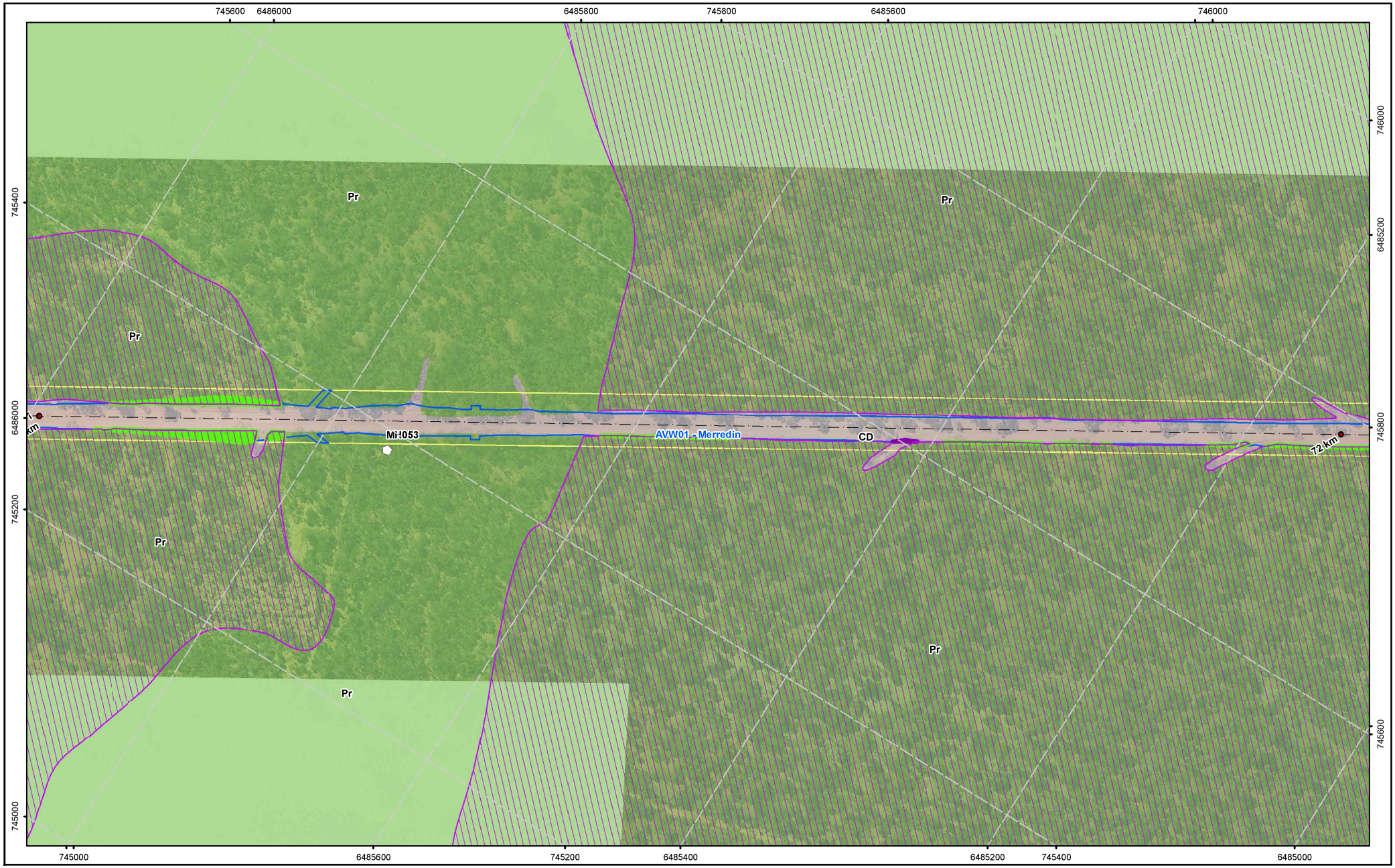
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 70km to Chn 71km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 71km to Chn 72km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline · Previously cleared · Previous Clearing Permit Boundary · CD - Completely Degraded · Pr - Pristine
Biogeographic Region · Other native vegetation clearing footprint · Cadastre
Likely TEC

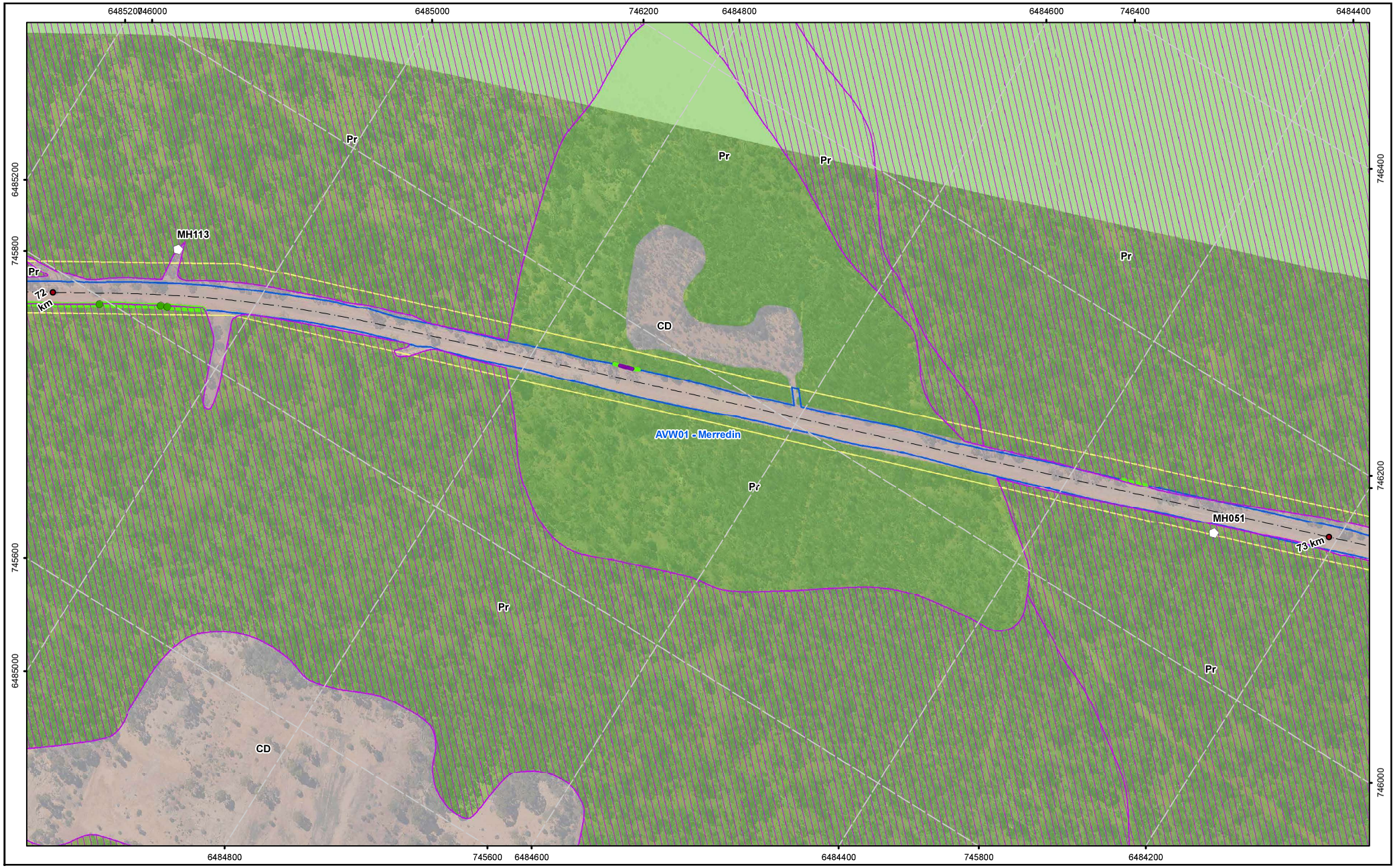
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 71km to Chn 72km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 72km to Chn 73km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- Pr - Pristine

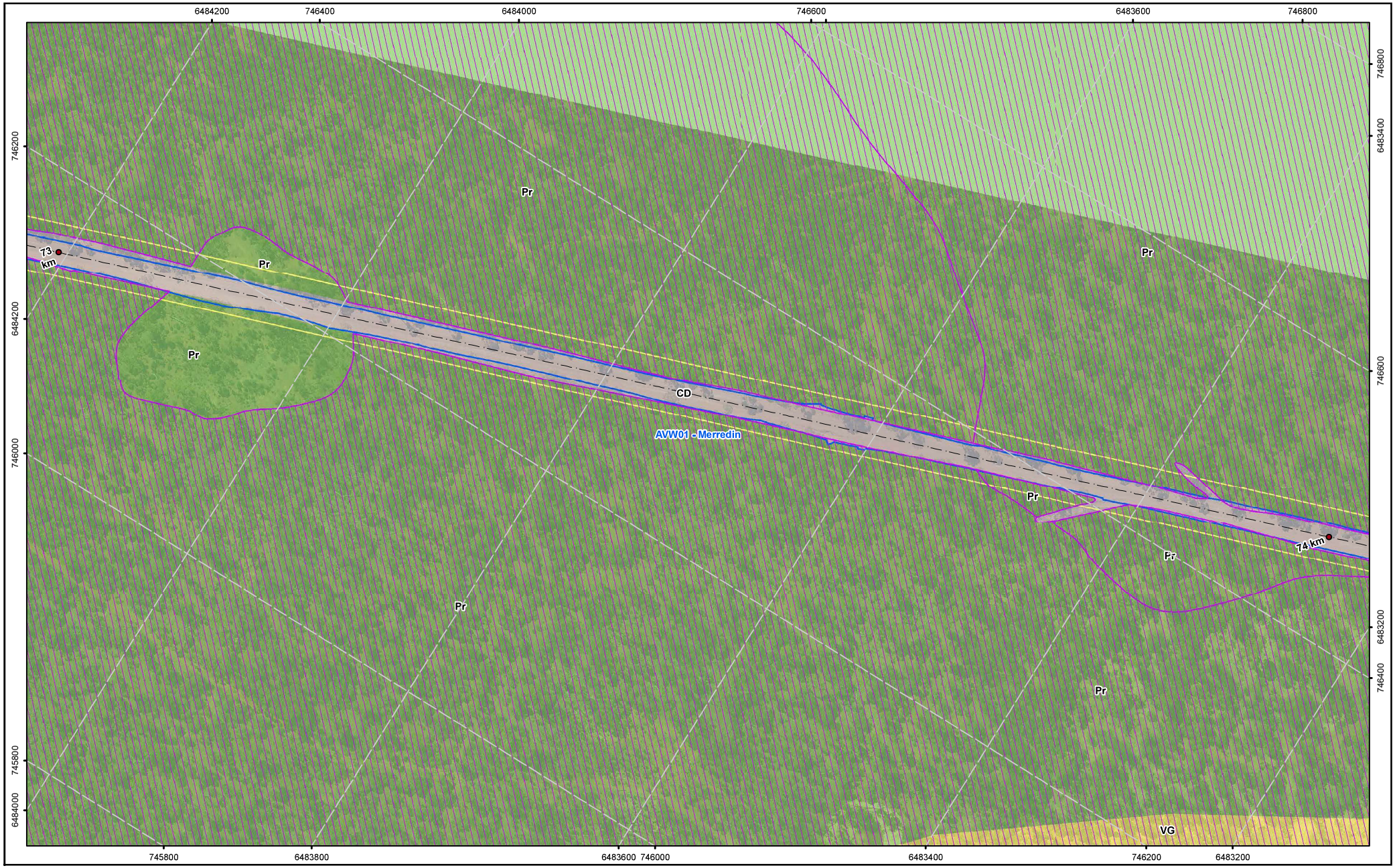
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 72km to Chn 73km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 73km to Chn 74km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- VG - Very Good
- Likely TEC

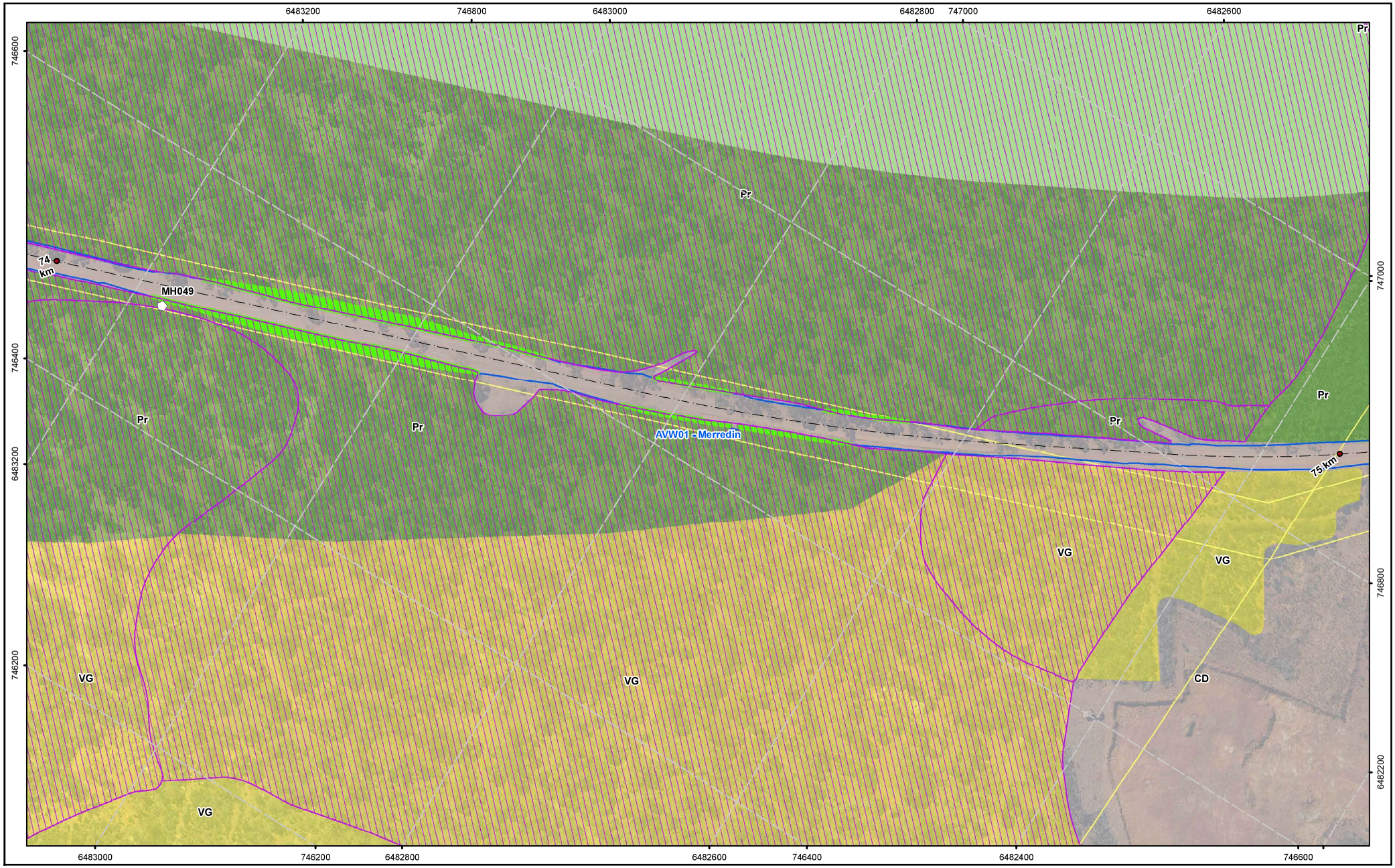
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 73km to Chn 74km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 74km to Chn 75km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- VG - Very Good
- Likely TEC

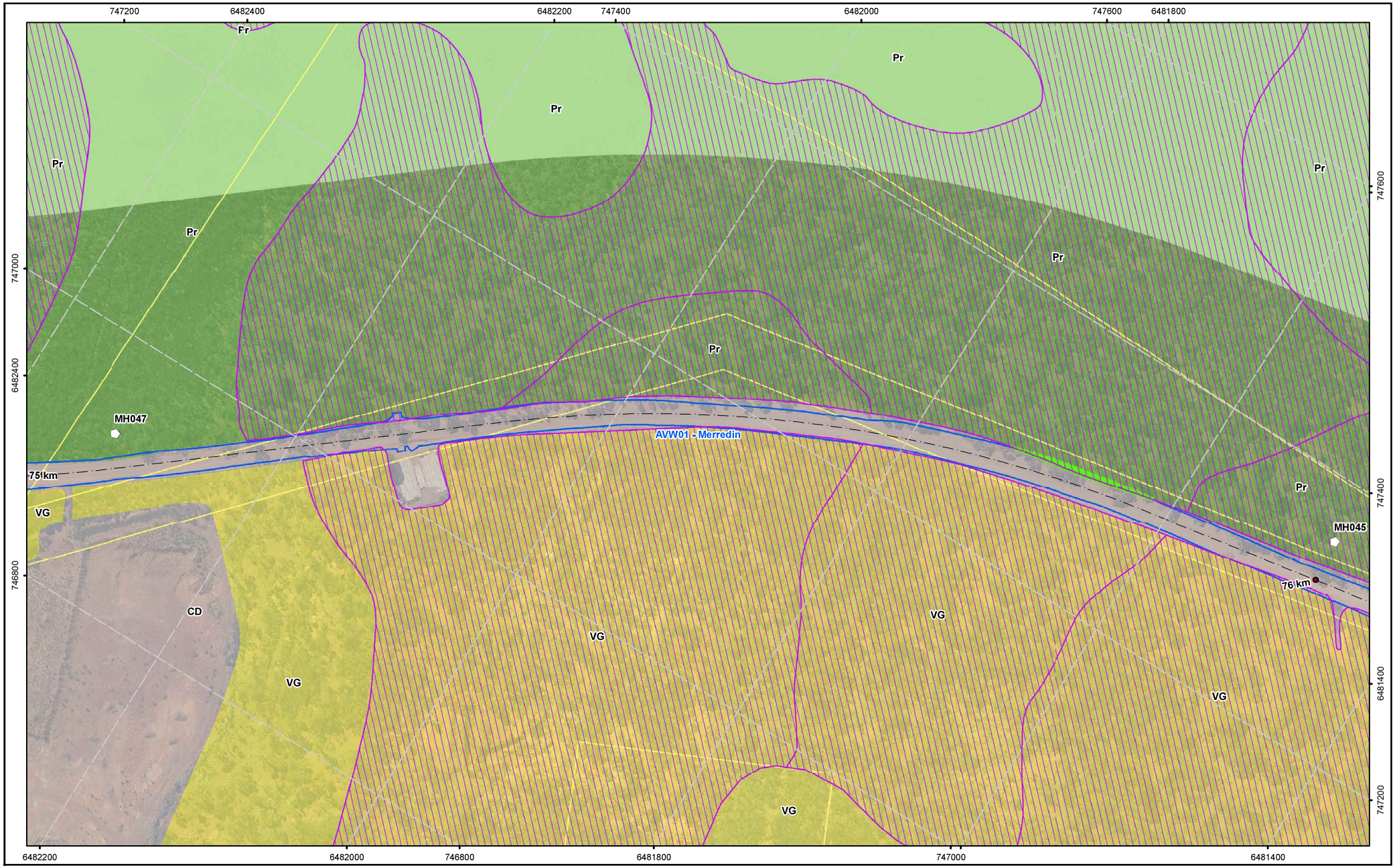
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 74km to Chn 75km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 75km to Chn 76km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- VG - Very Good
- Likely TEC

0 100 m

Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 75km to Chn 76km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 76km to Chn 77km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Acacia asepala, P2
- Quadrat
- Road Centreline
- Biogeographic Region
- Likely TEC
- Previously cleared
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- VG - Very Good
- Pr - Pristine

0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 76km to Chn 77km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 77km to Chn 78km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- VG - Very Good
- Likely TEC

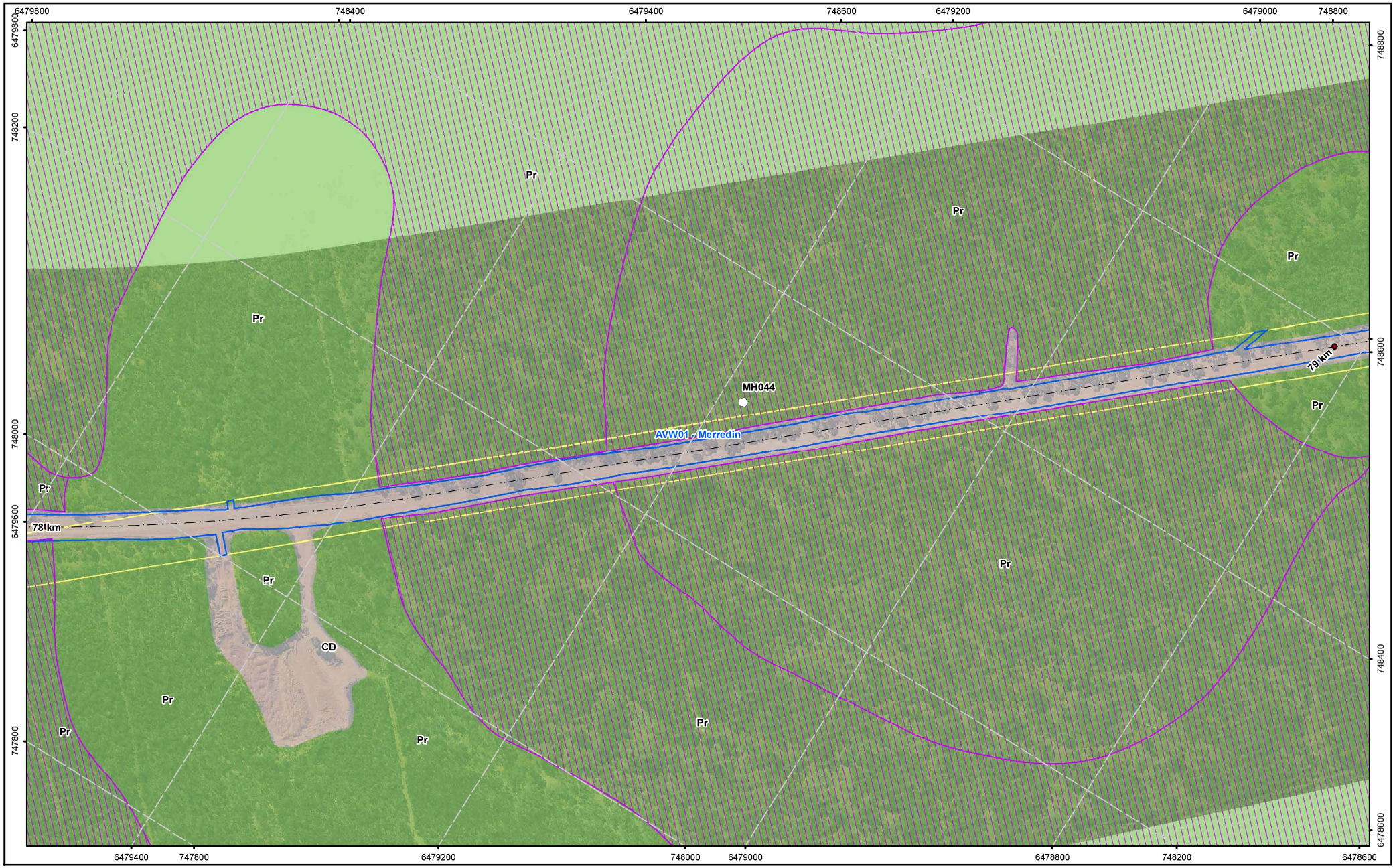
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 77km to Chn 78km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 78km to Chn 79km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

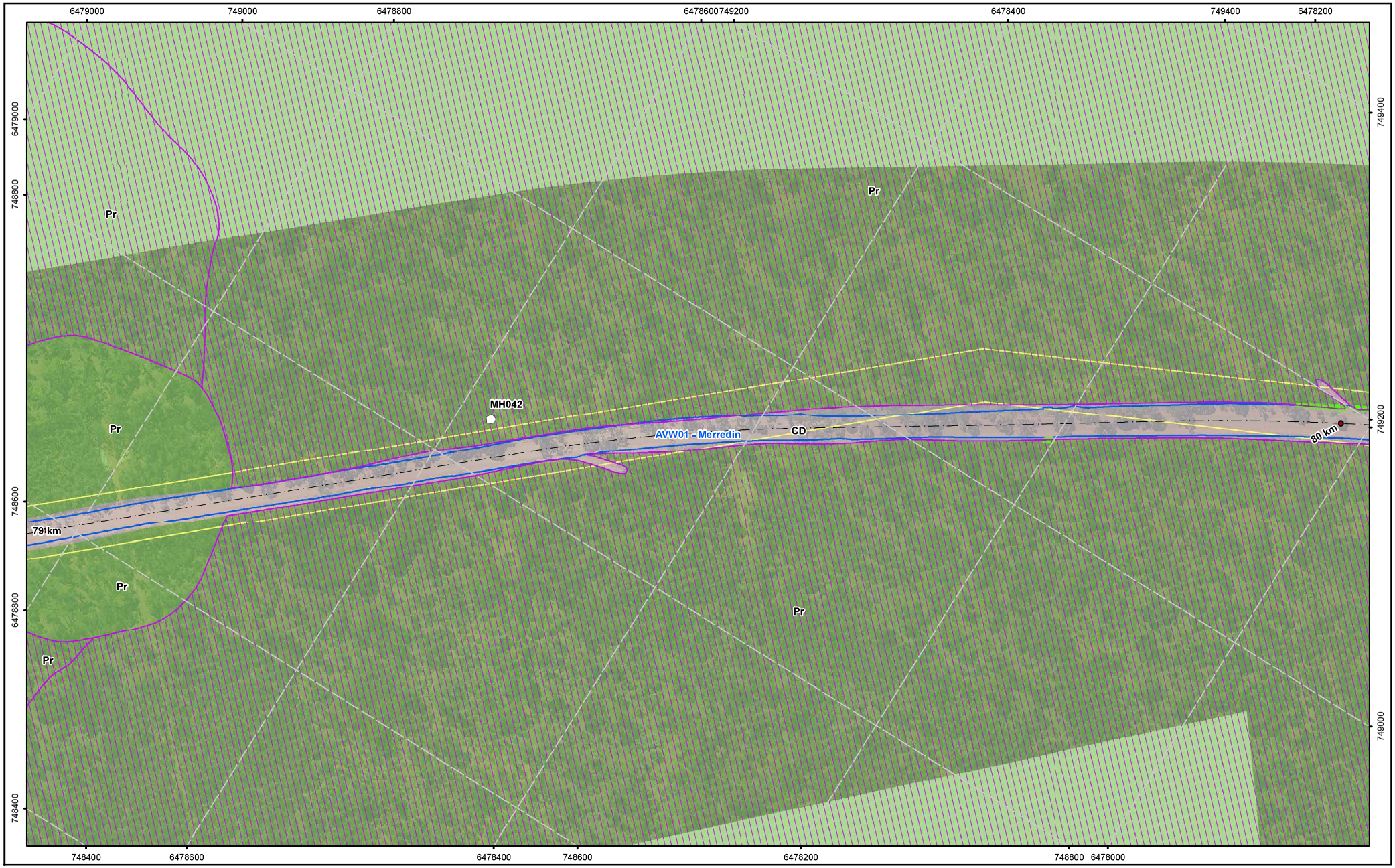
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
Likely TEC

0 100 m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 78km to Chn 79km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 79km to Chn 80km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- Likely TEC

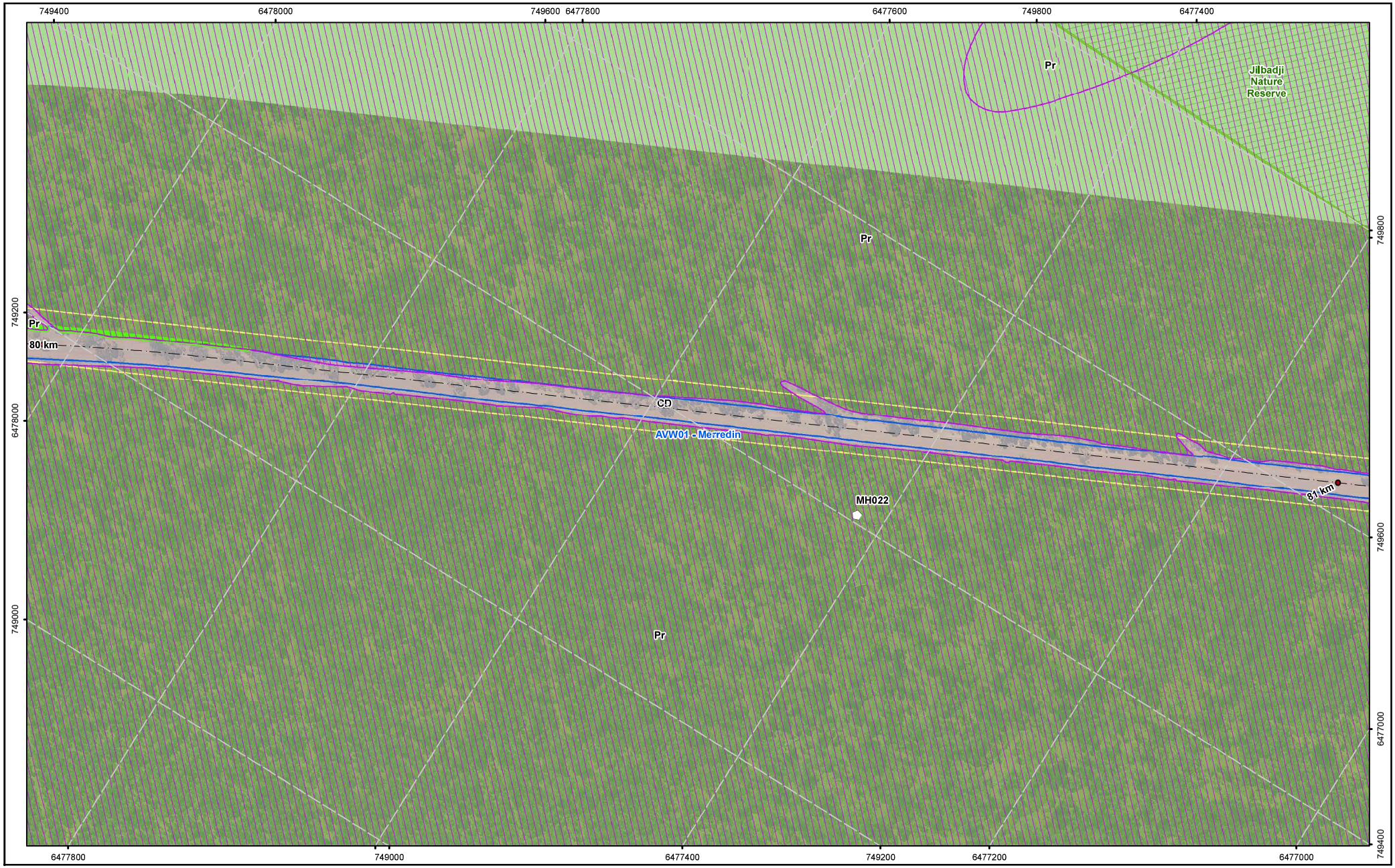
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 79km to Chn 80km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 80km to Chn 81km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Biogeographic Region
- DBCA Legislated Land
- Likely TEC
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- Cadastre
- CD - Completely Degraded
- Pr - Pristine

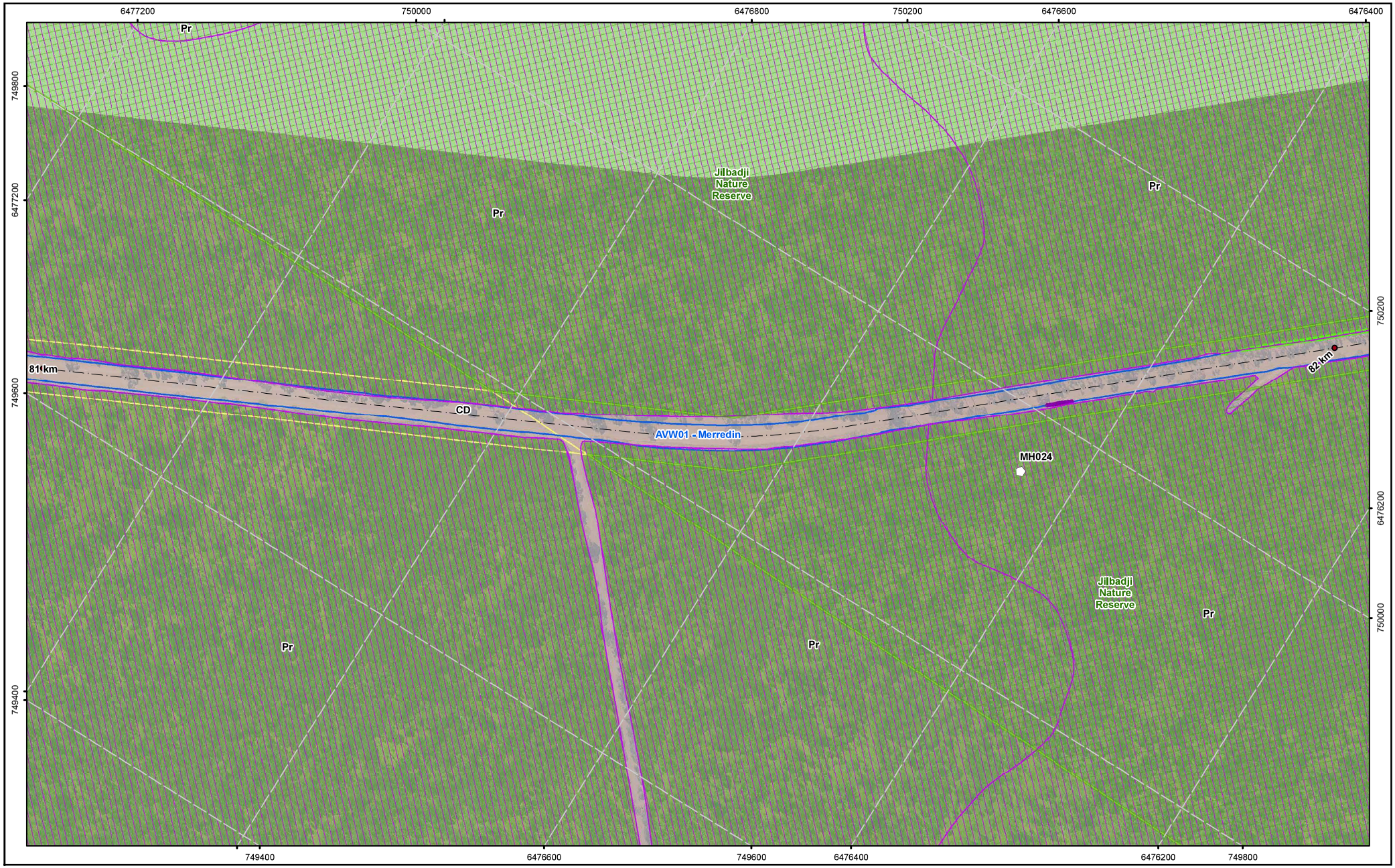
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 80km to Chn 81km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 81km to Chn 82km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Other native vegetation clearing footprint
- Cadastre
- DBCA Legislated Land
- Likely TEC

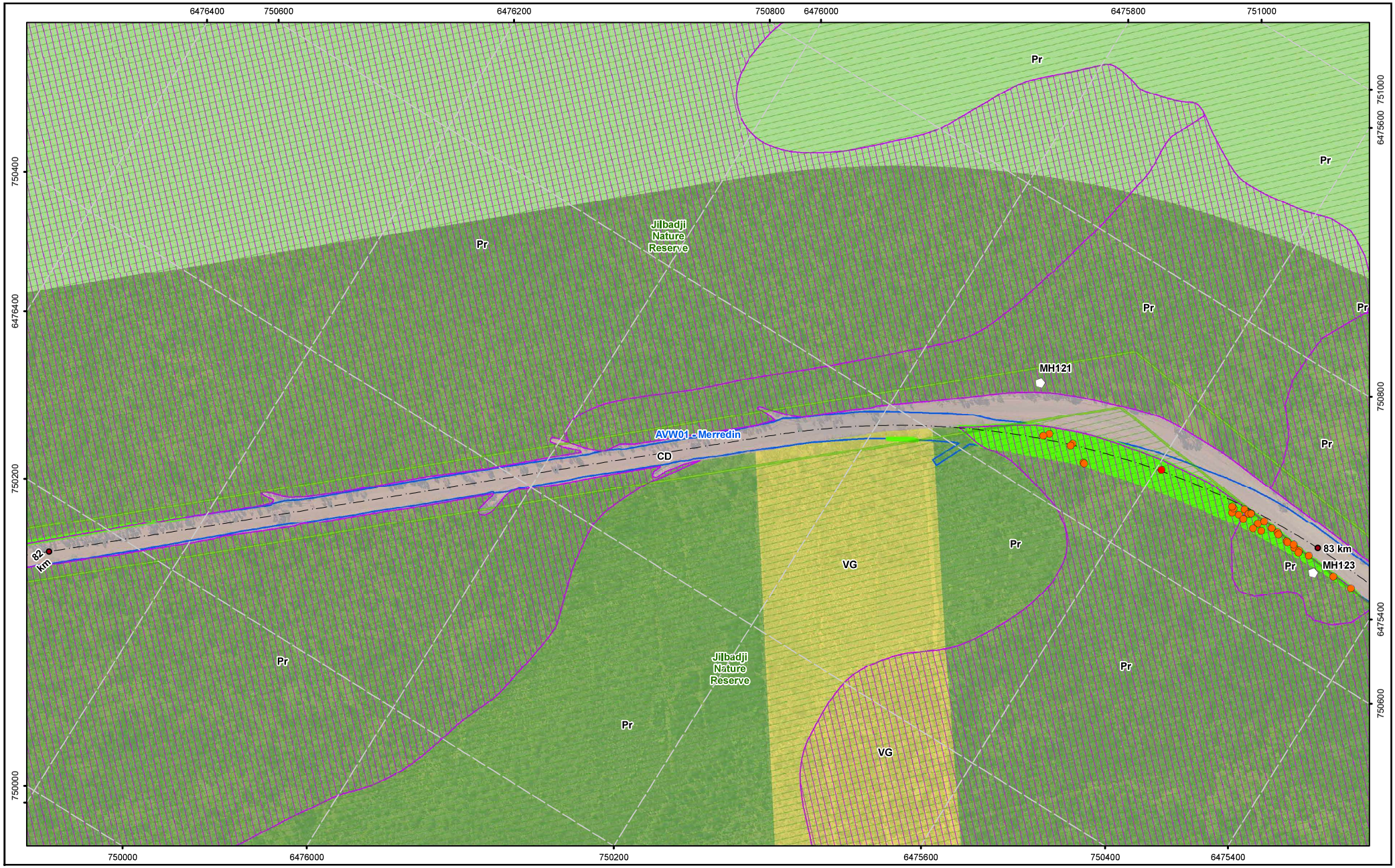
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 81km to Chn 82km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 82km to Chn 83km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Grevillea lissopleura, P1
- Teucrium diabolicum, P3
- Quadrat
- Road Centreline
- Biogeographic Region
- DBCA Legislated Land
- Likely TEC
- Other native vegetation clearing footprint
- Cadastre
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- VG - Very Good
- Pr - Pristine

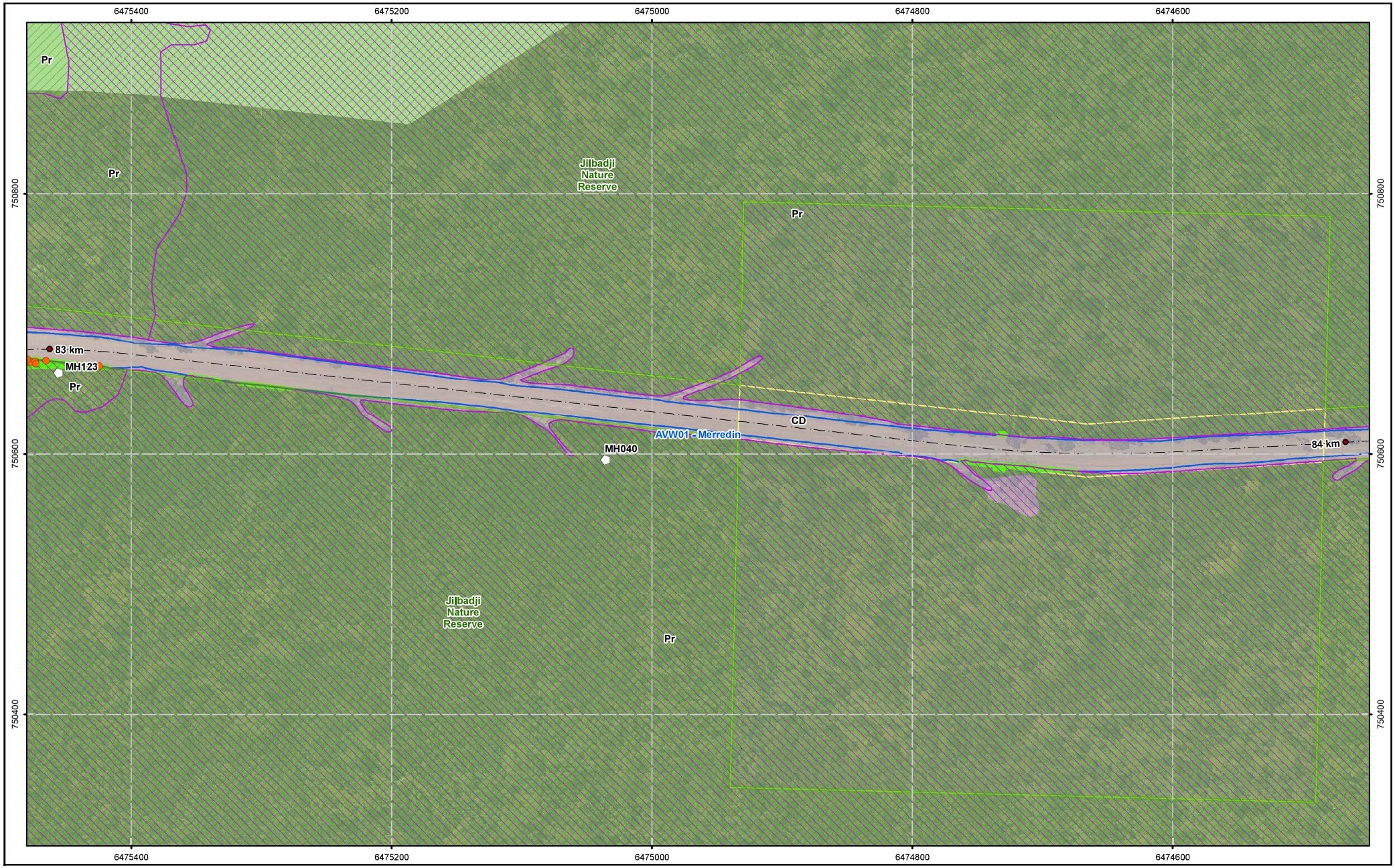
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 82km to Chn 83km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 83km to Chn 84km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Grevillea lissopleura, P1
- Road Centreline
- Other native vegetation clearing footprint
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Quadrat
- Biogeographic Region
- Cadastre
- DBCA Legislated Land
- Likely TEC

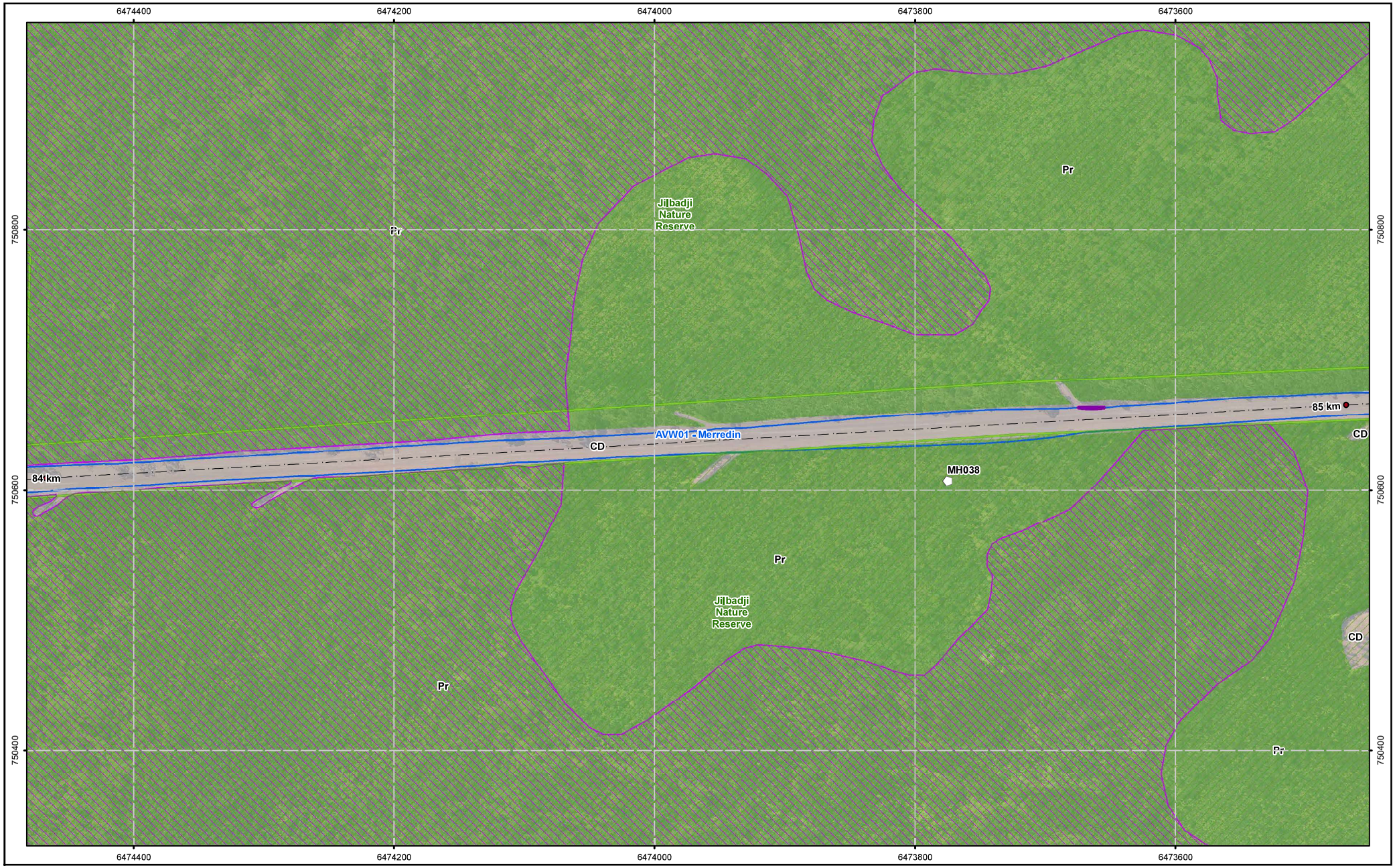
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 83km to Chn 84km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 84km to Chn 85km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
Quadrat
Road Centreline
Previously cleared
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land
Likely TEC

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 84km to Chn 85km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 85km to Chn 86km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- DBCA Legislated Land
- Likely TEC

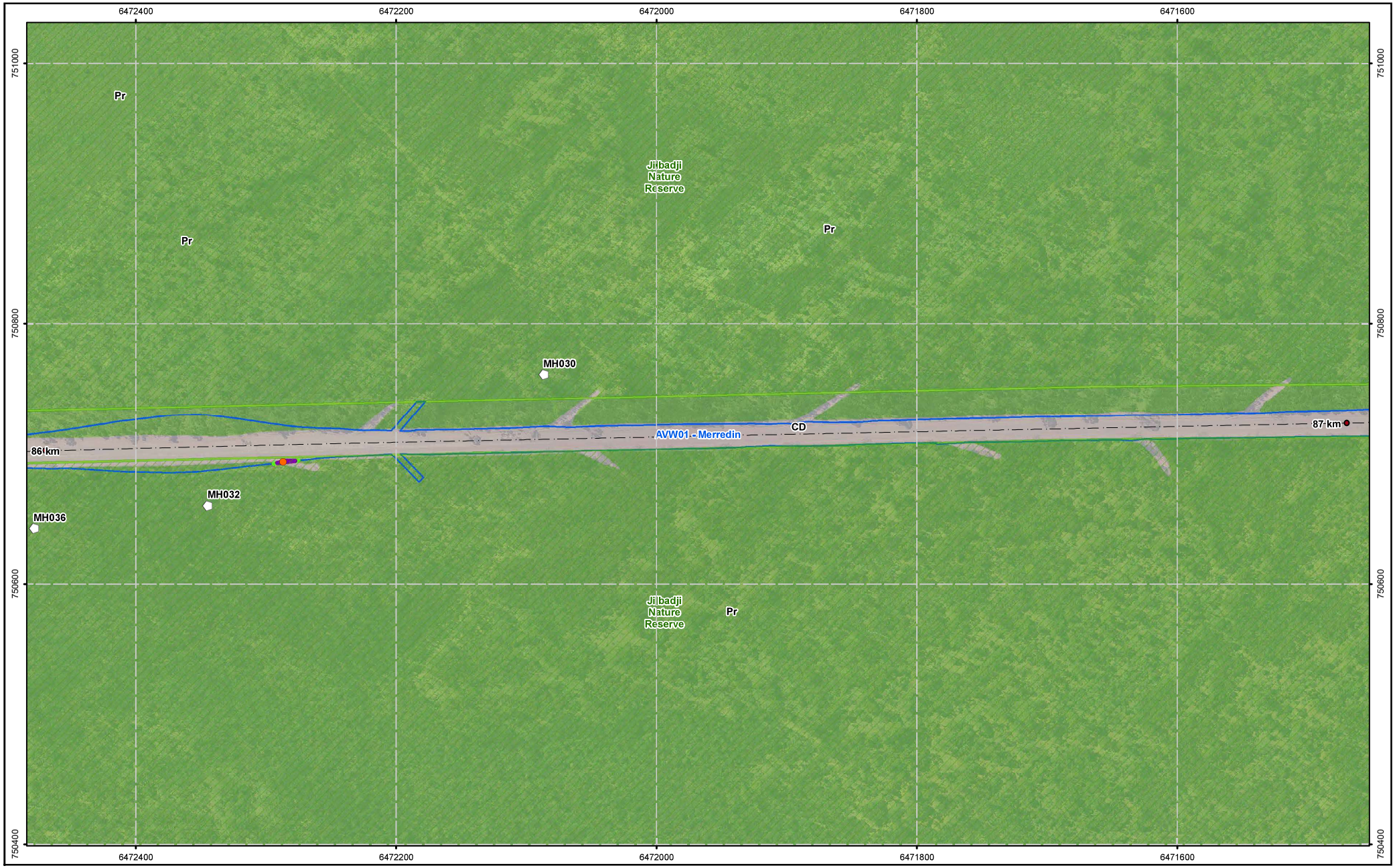
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 85km to Chn 86km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 86km to Chn 87km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Grevillea lissopleura, P1
- Road Centreline
- Previously cleared
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Quadrat
- Biogeographic Region
- Other native vegetation clearing footprint
- Cadastre
- DBCA Legislated Land

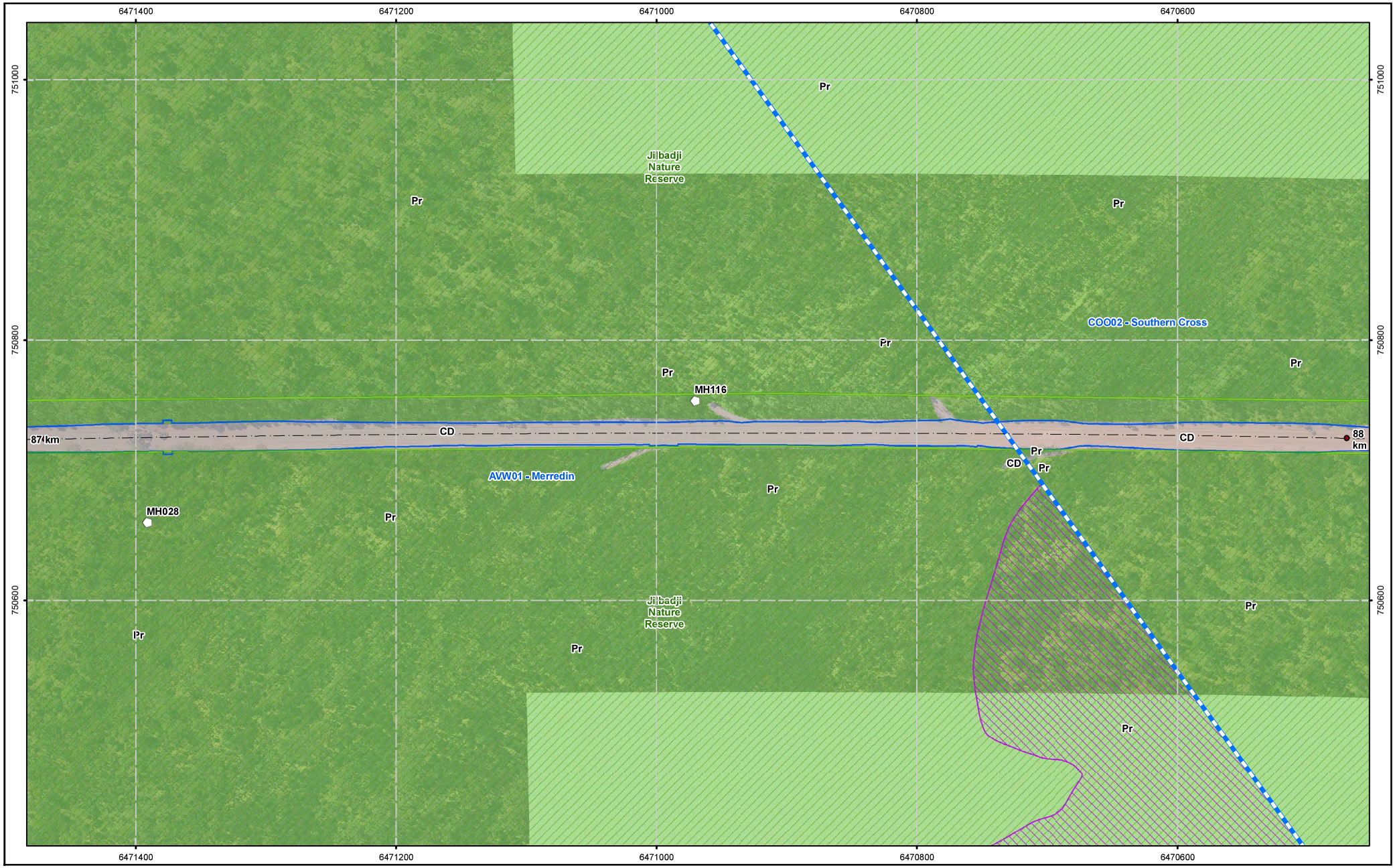
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 86km to Chn 87km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 87km to Chn 88km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

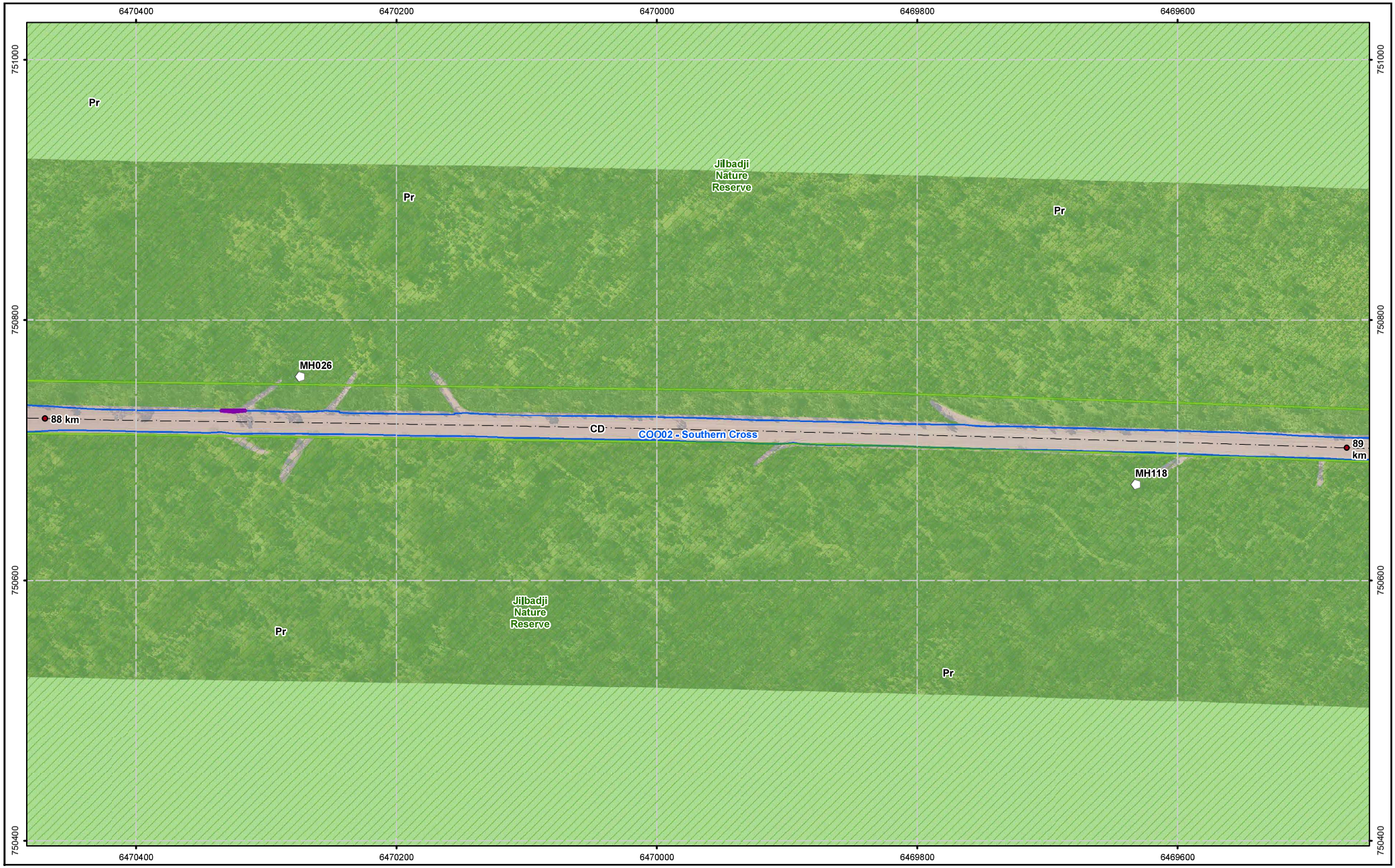
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land
Likely TEC

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 87km to Chn 88km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 88km to Chn 89km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
Quadrat
Road Centreline
Previously cleared
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 88km to Chn 89km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 89km to Chn 90km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

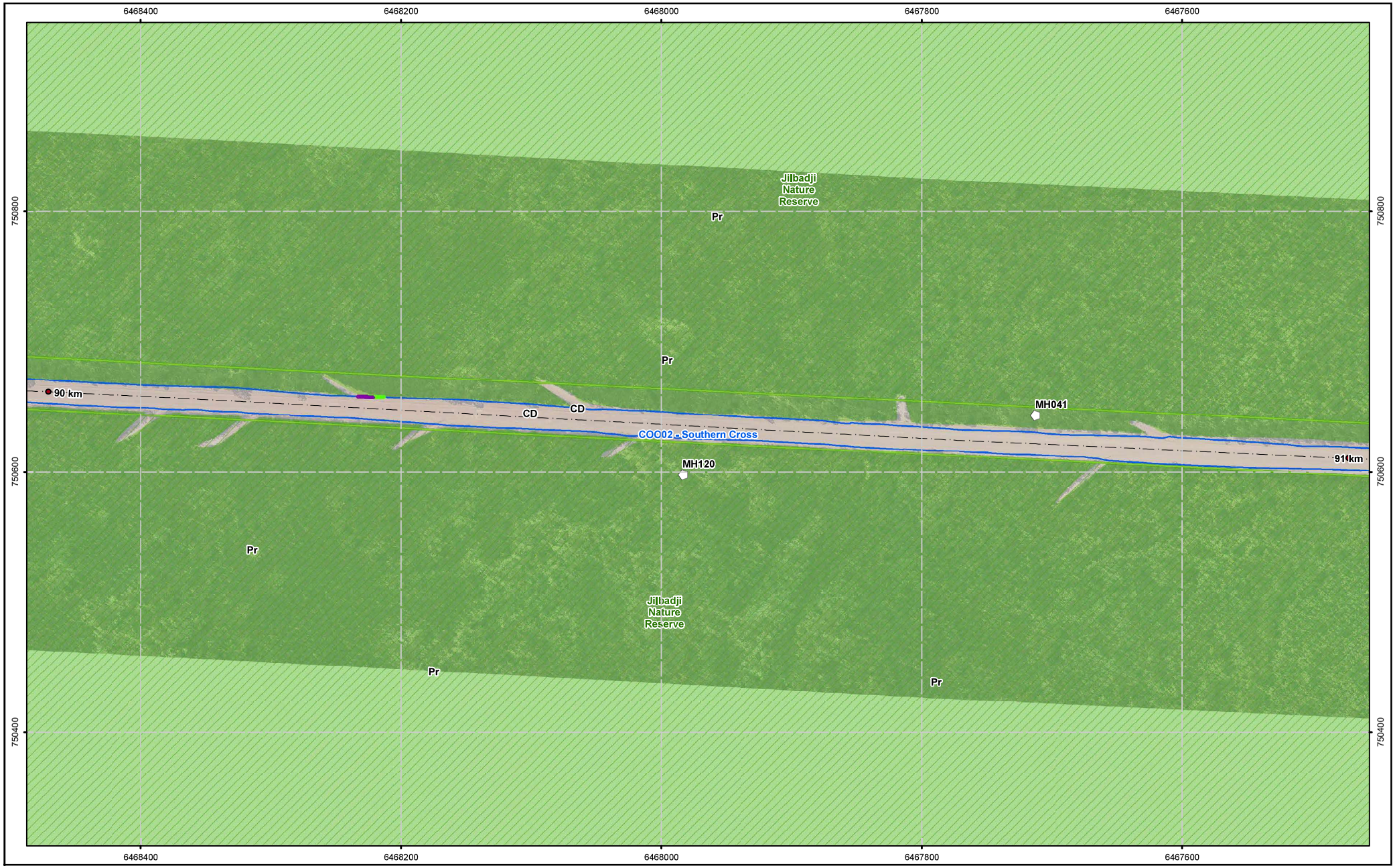
Legend
Quadrat
Road Centreline
Previously cleared
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Other native vegetation clearing footprint
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 89km to Chn 90km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 90km to Chn 91km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

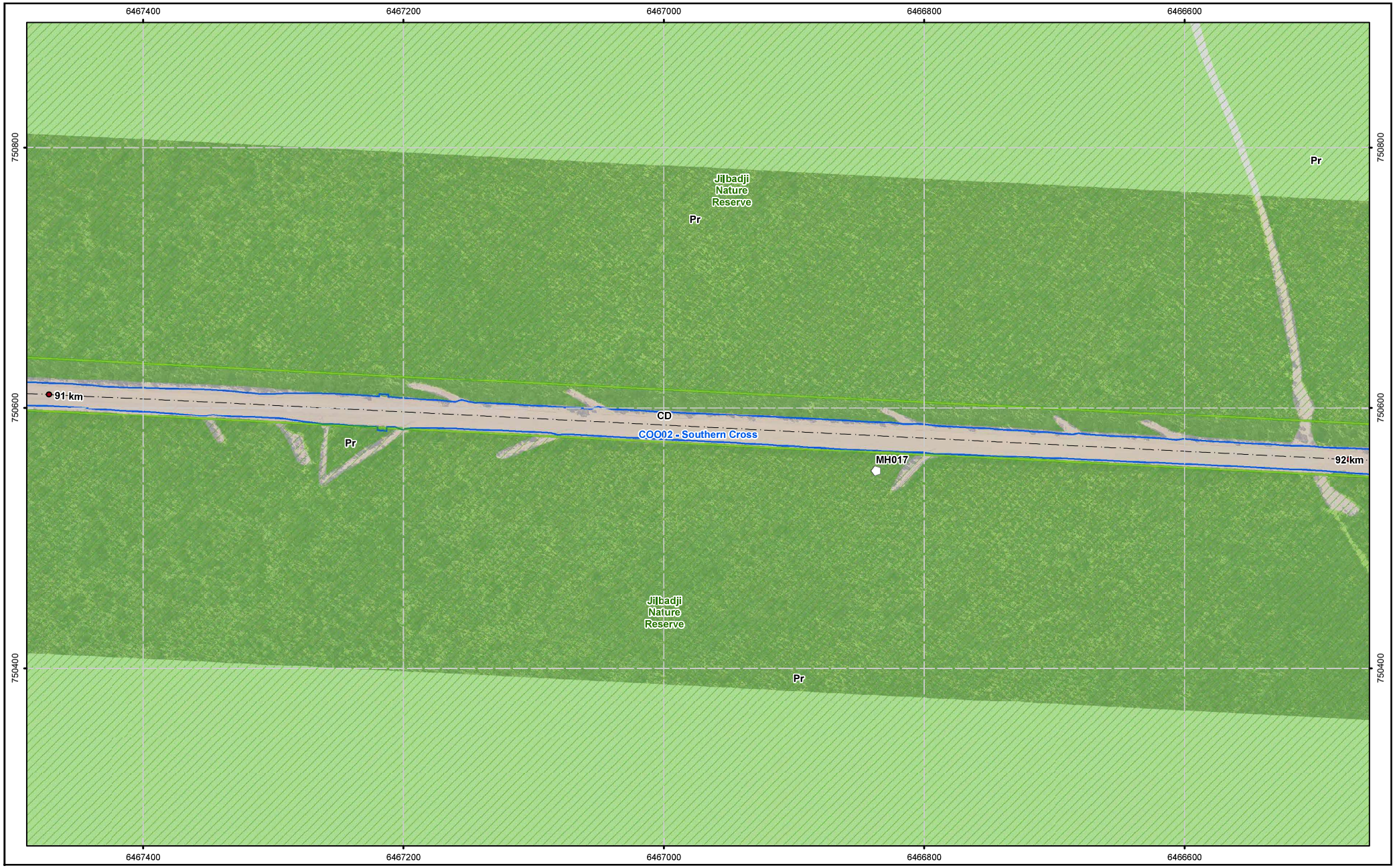
Legend
Quadrat
Road Centreline
Previously cleared
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Other native vegetation clearing footprint
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 90km to Chn 91km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 91km to Chn 92km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

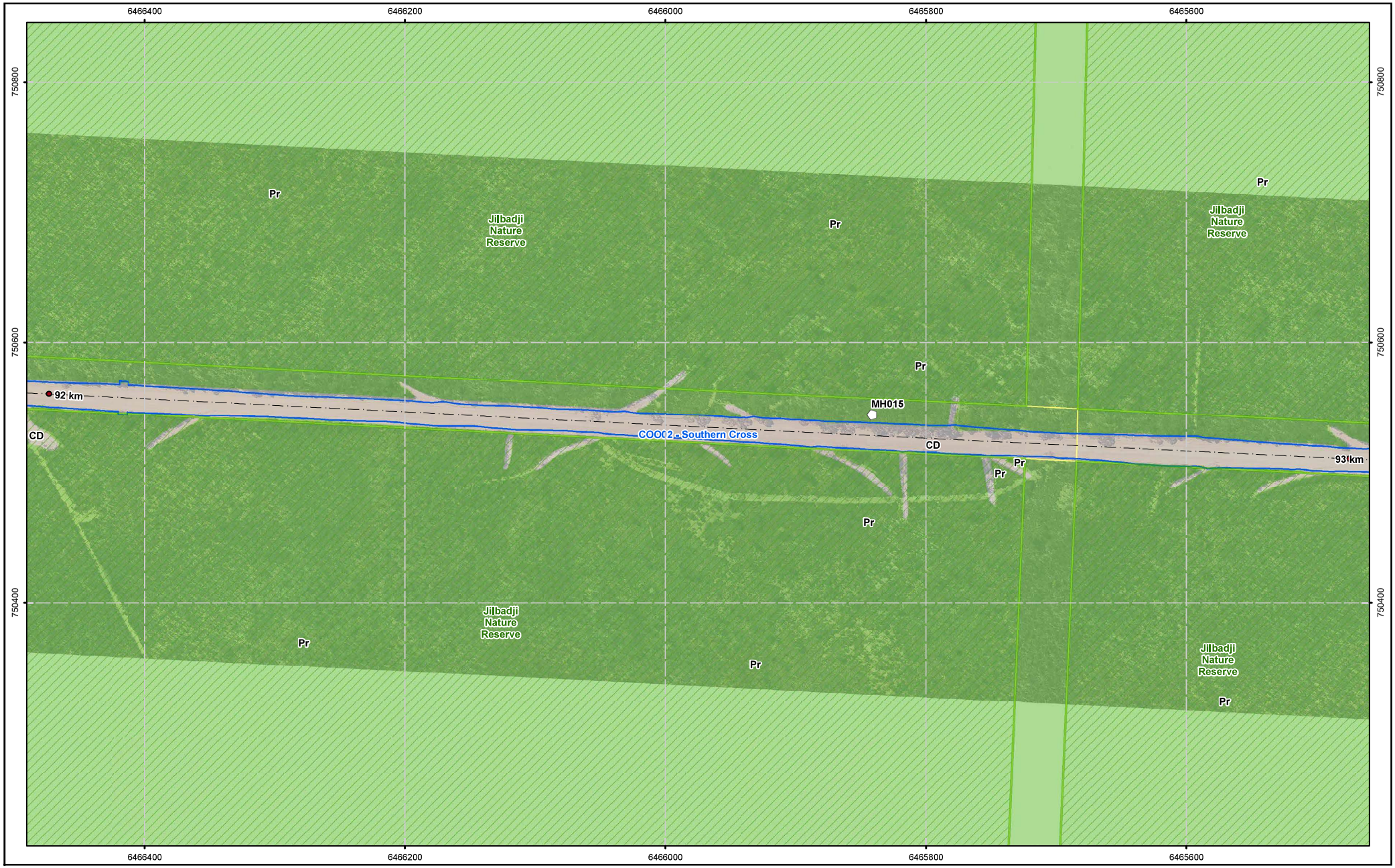
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 91km to Chn 92km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 92km to Chn 93km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

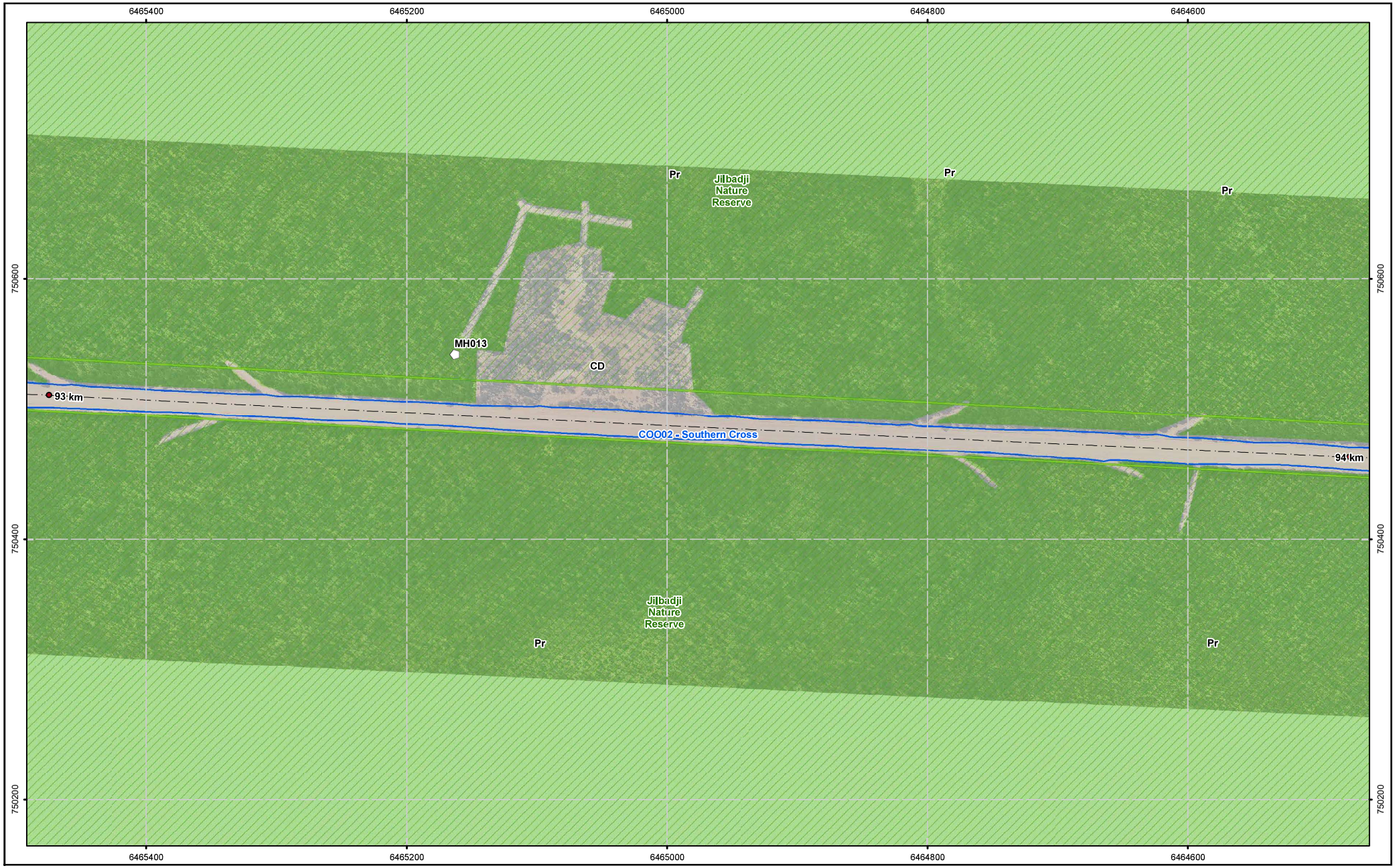
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 92km to Chn 93km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 93km to Chn 94km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

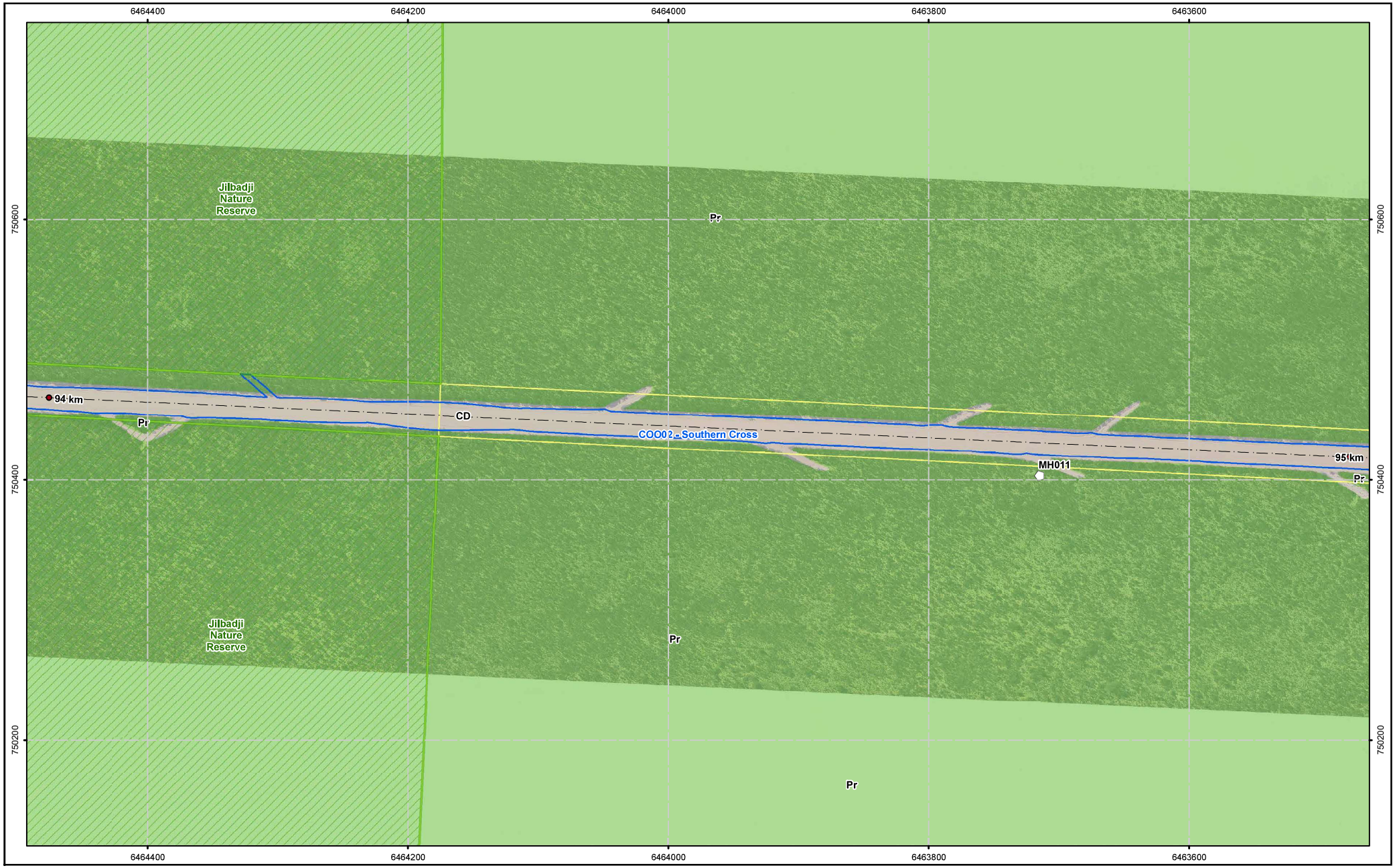
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 93km to Chn 94km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 94km to Chn 95km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

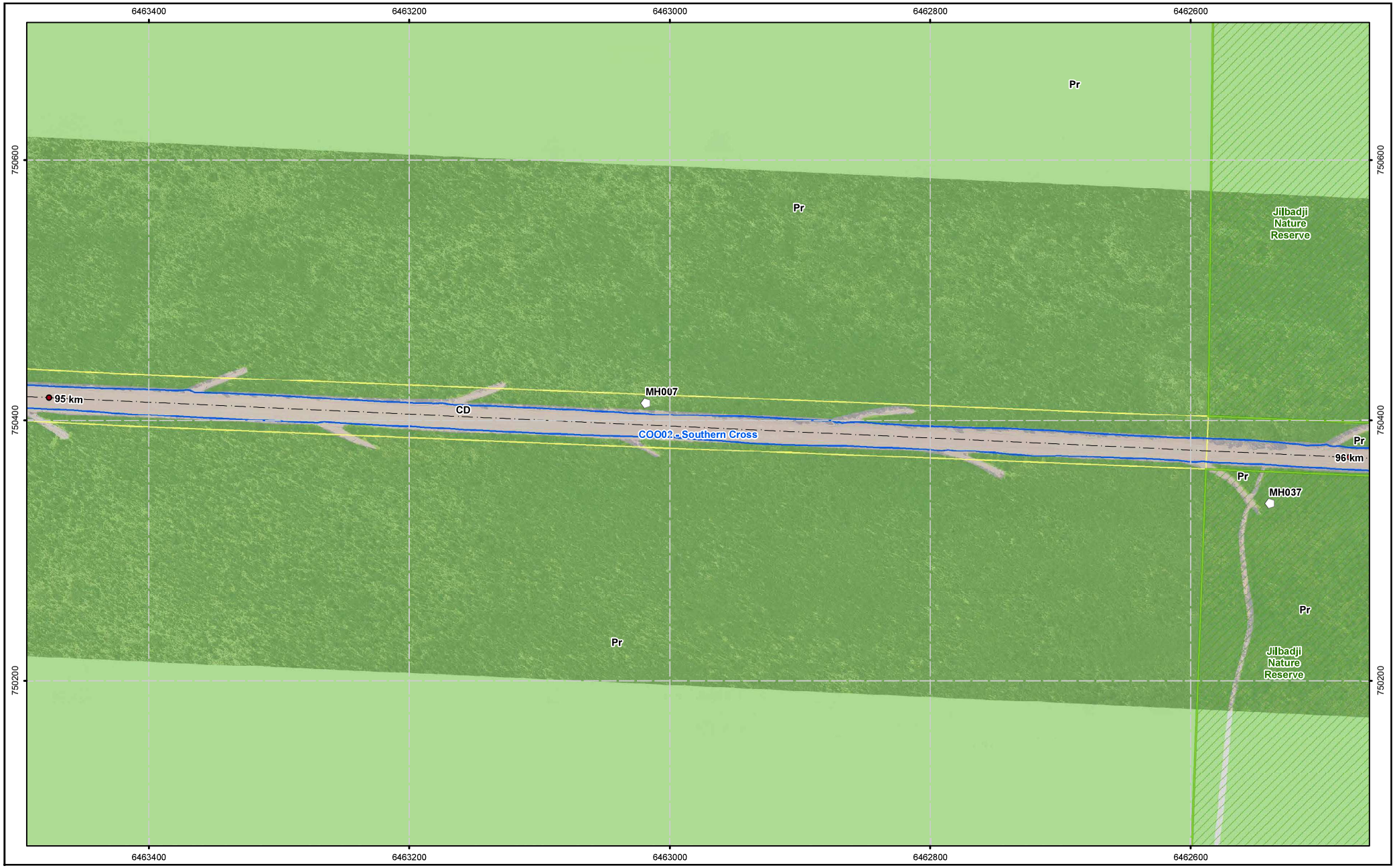
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 94km to Chn 95km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 95km to Chn 96km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

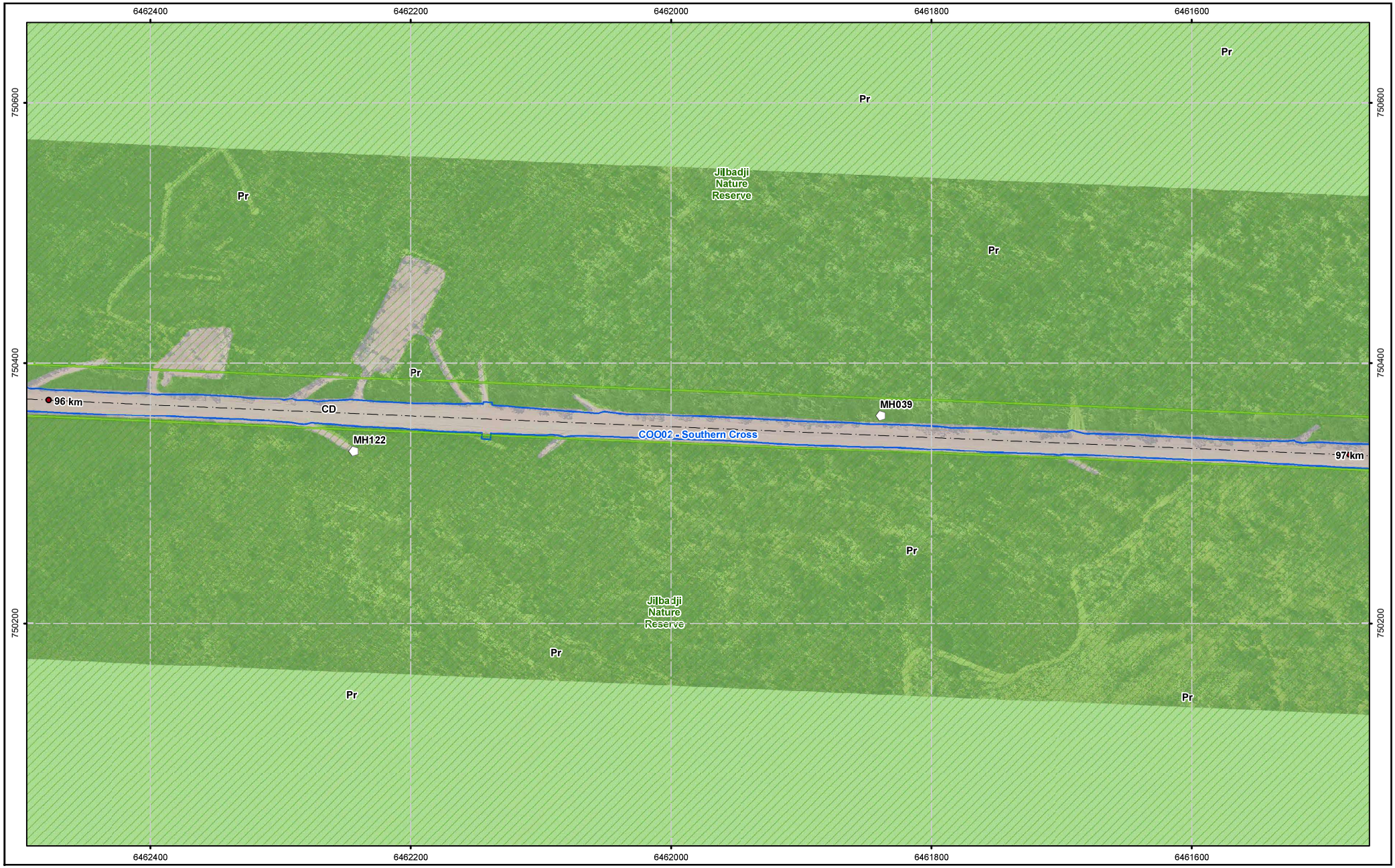
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100 m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 95km to Chn 96km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 96km to Chn 97km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

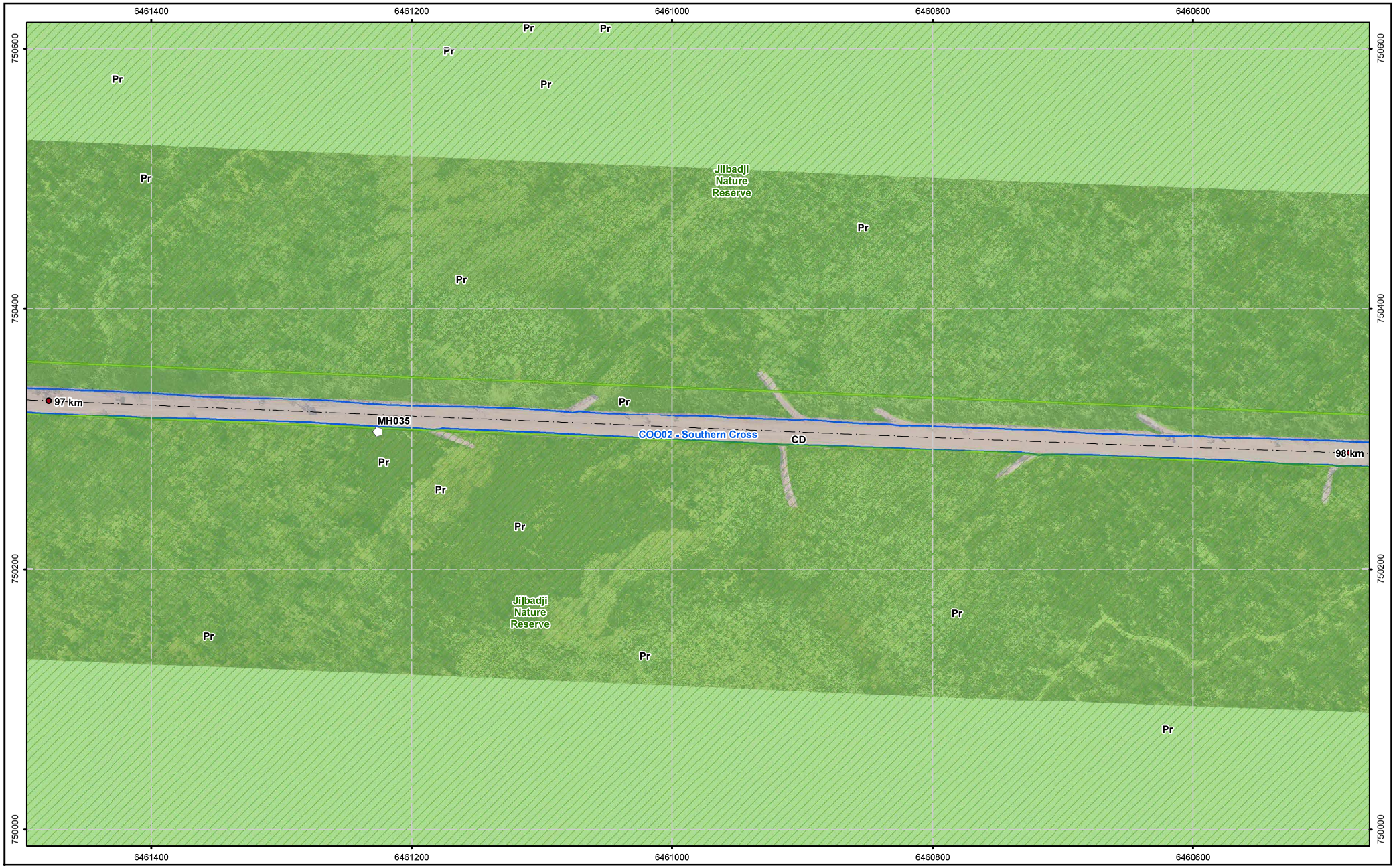
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 96km to Chn 97km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 97km to Chn 98km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

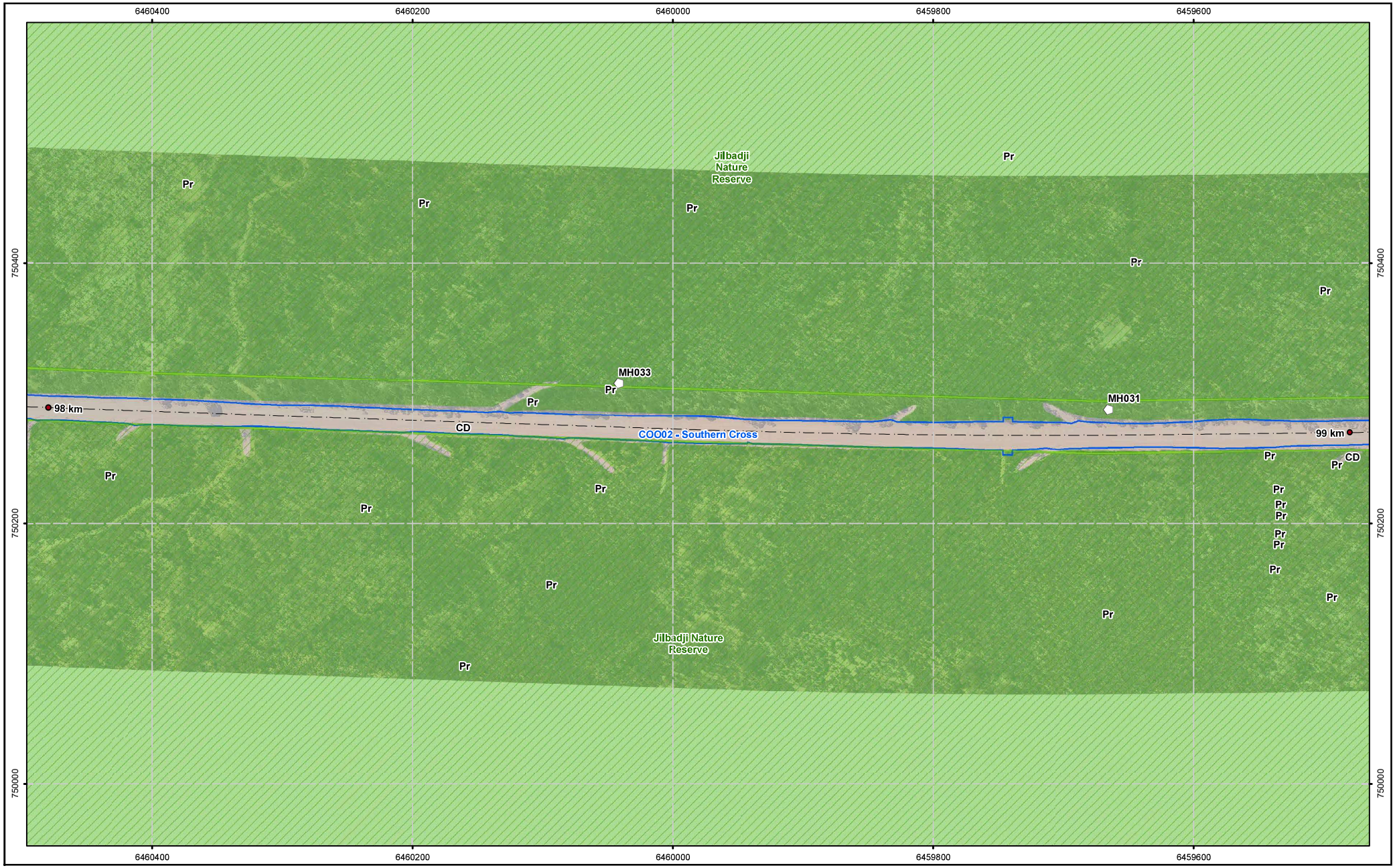
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 97km to Chn 98km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 98km to Chn 99km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

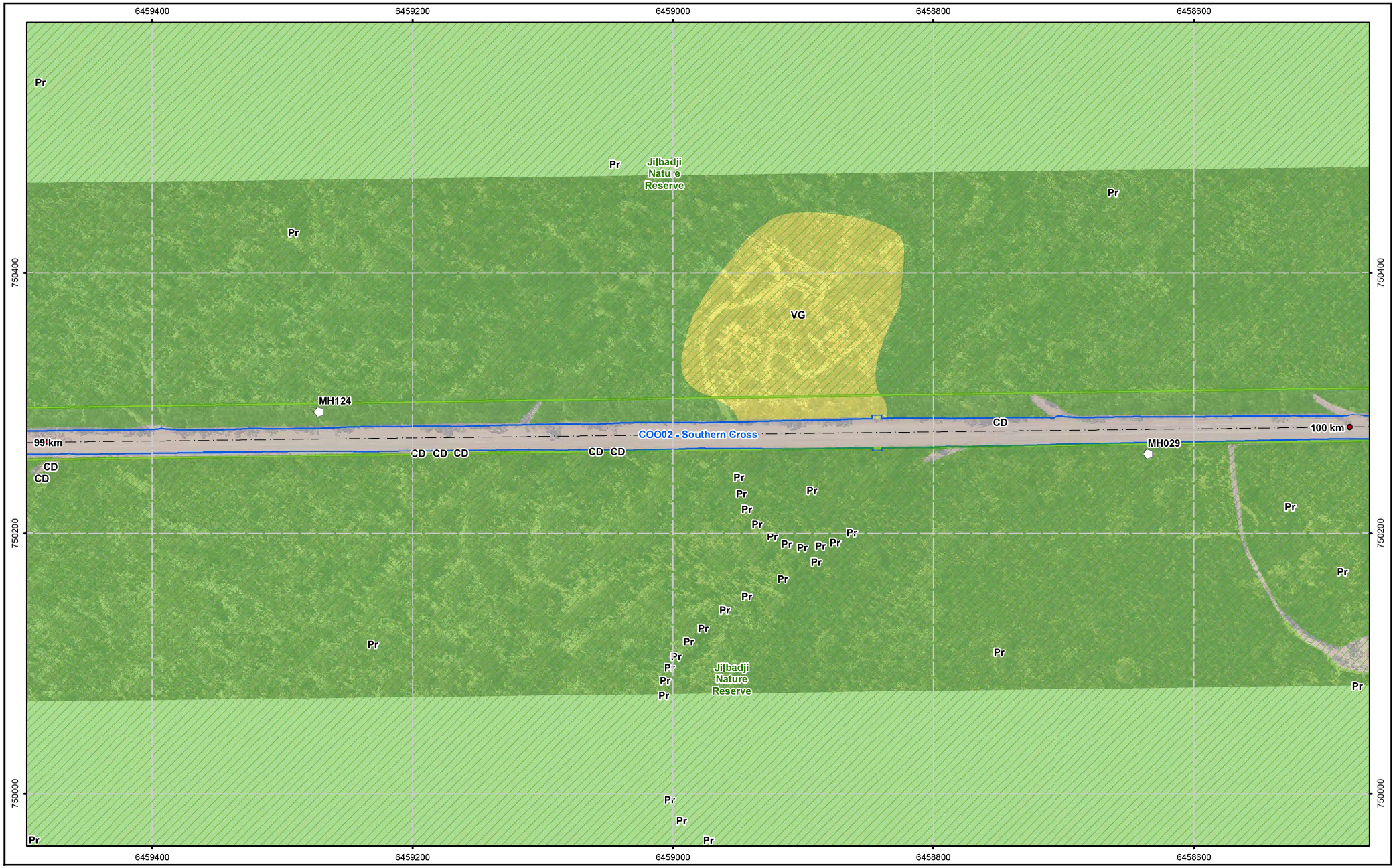
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 98km to Chn 99km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 99km to Chn 100km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline — Previous Clearing Permit Boundary — CD - Completely Degraded — Pr - Pristine
Biogeographic Region — Cadastre — VG - Very Good
DBCA Legislated Land

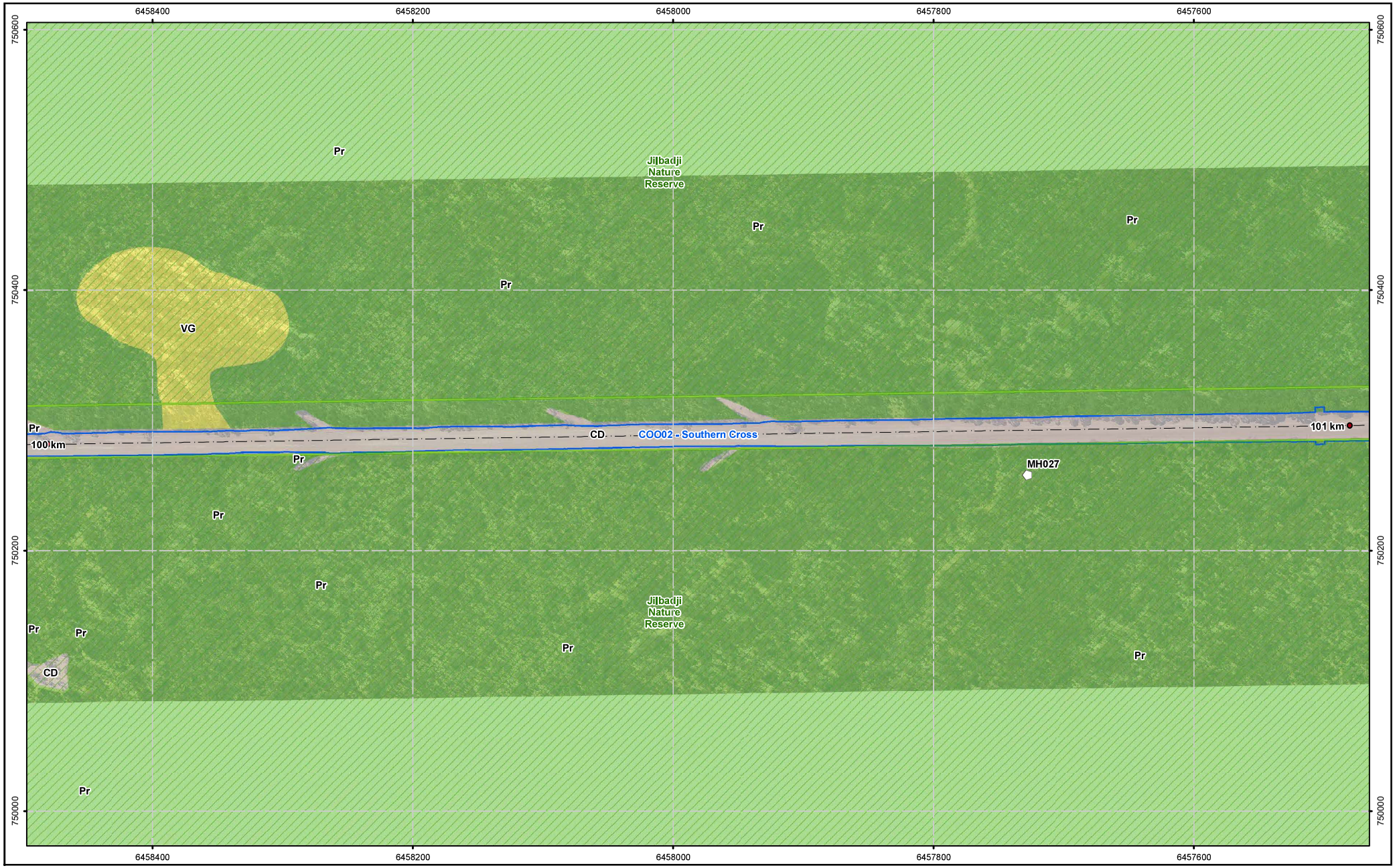
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 99km to Chn 100km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 100km to Chn 101km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

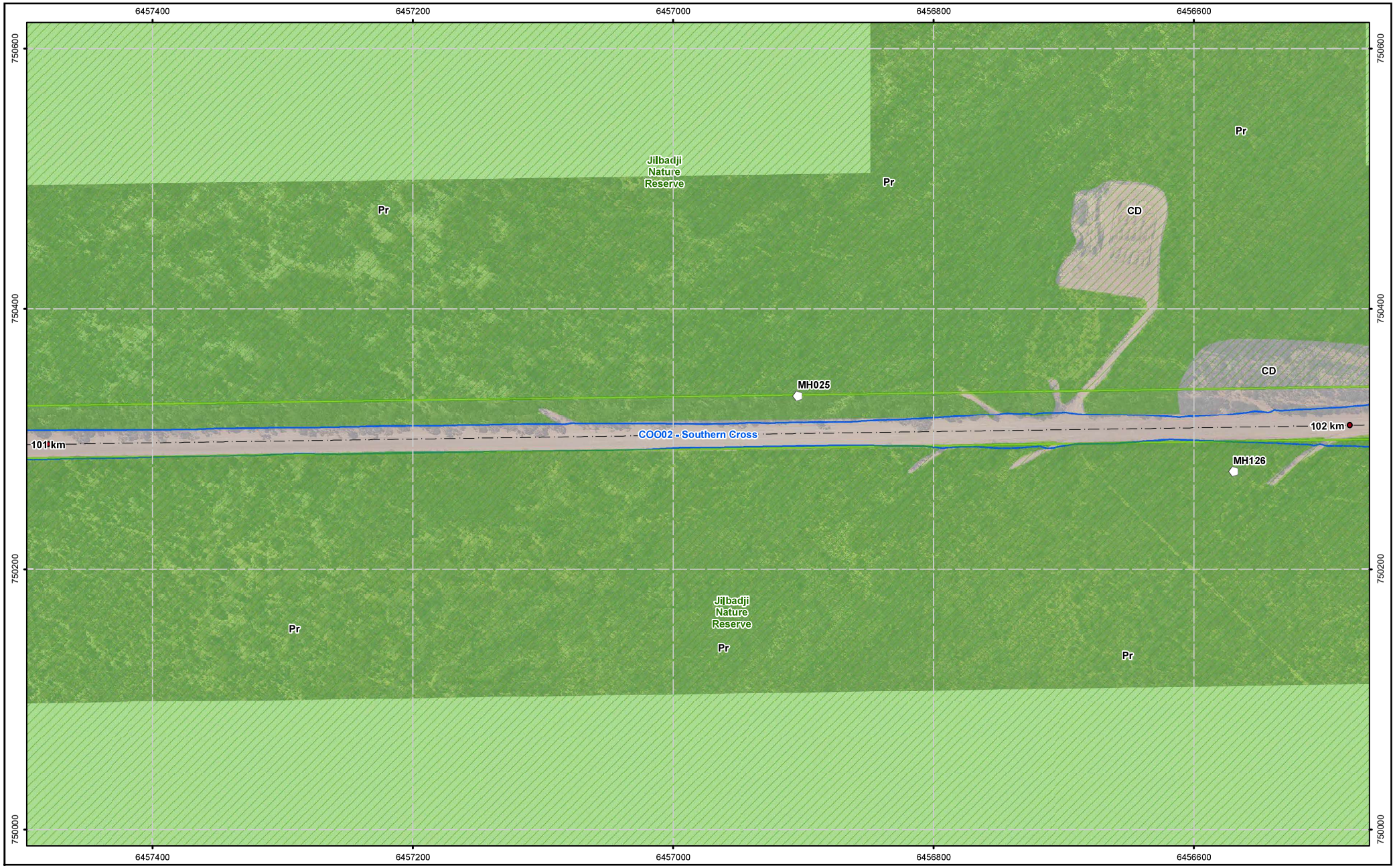
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
VG - Very Good
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 100km to Chn 101km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 101km to Chn 102km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

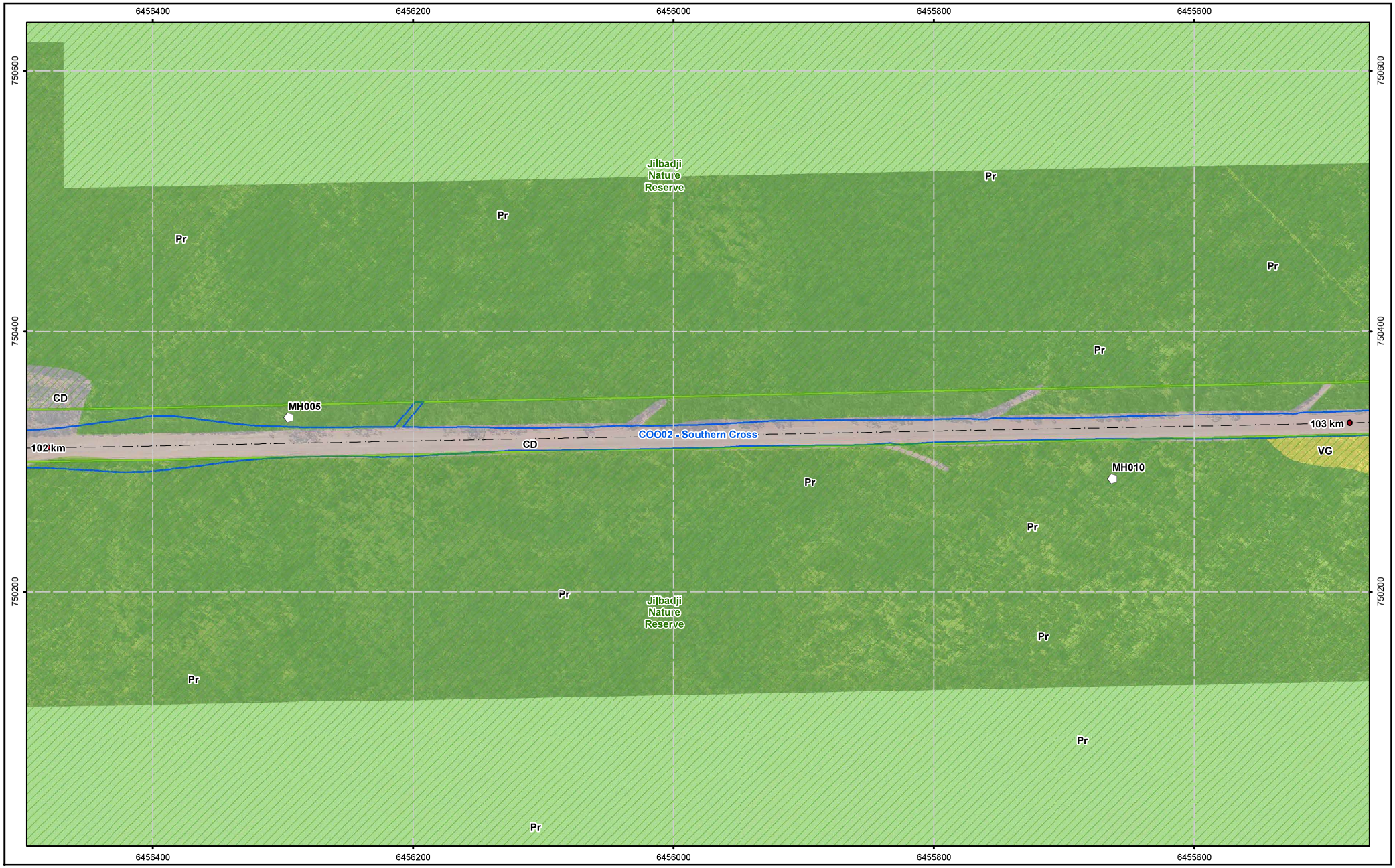
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 101km to Chn 102km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 102km to Chn 103km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

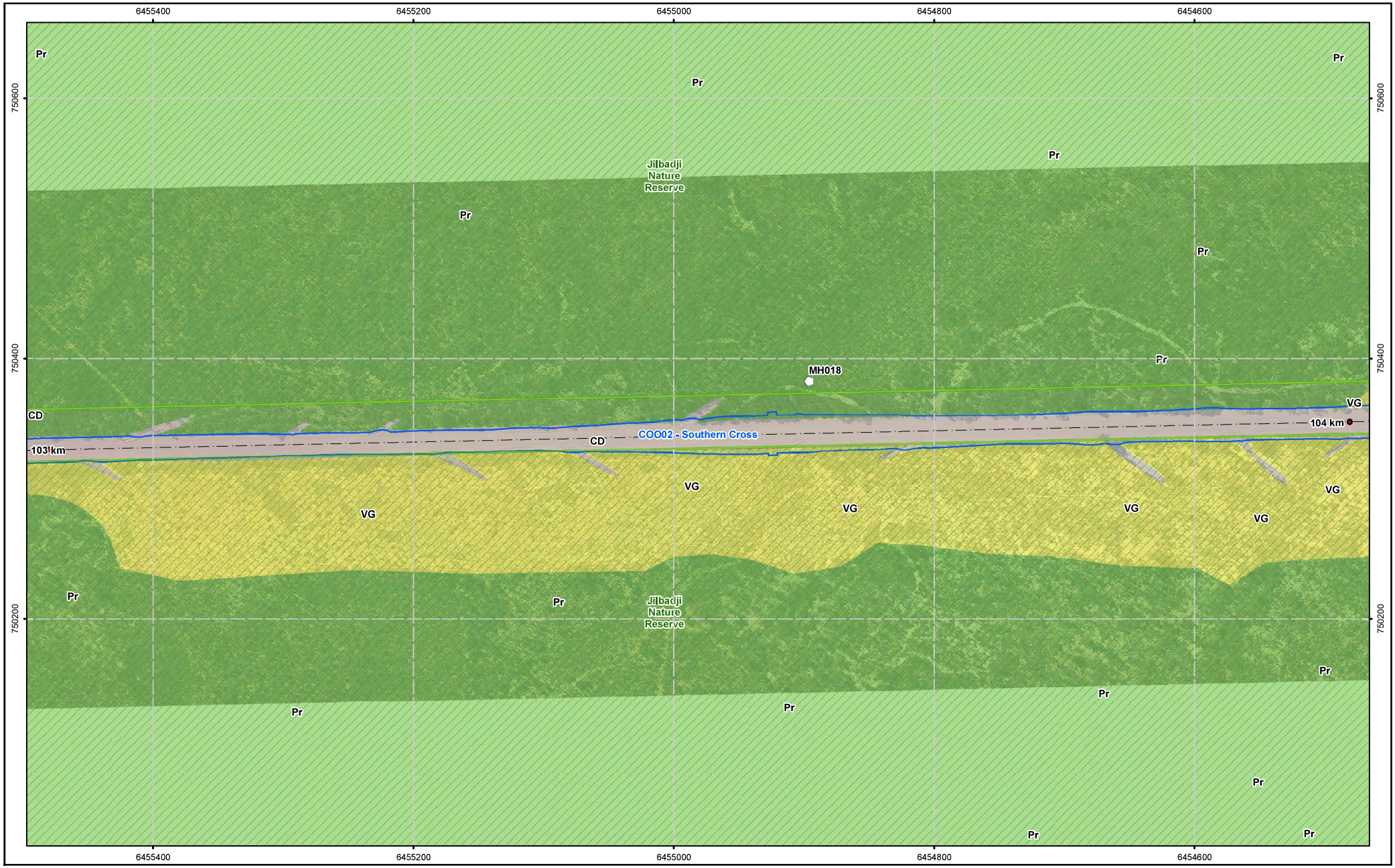
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
VG - Very Good
DBCA Legislated Land

0 100 m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 102km to Chn 103km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 103km to Chn 104km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

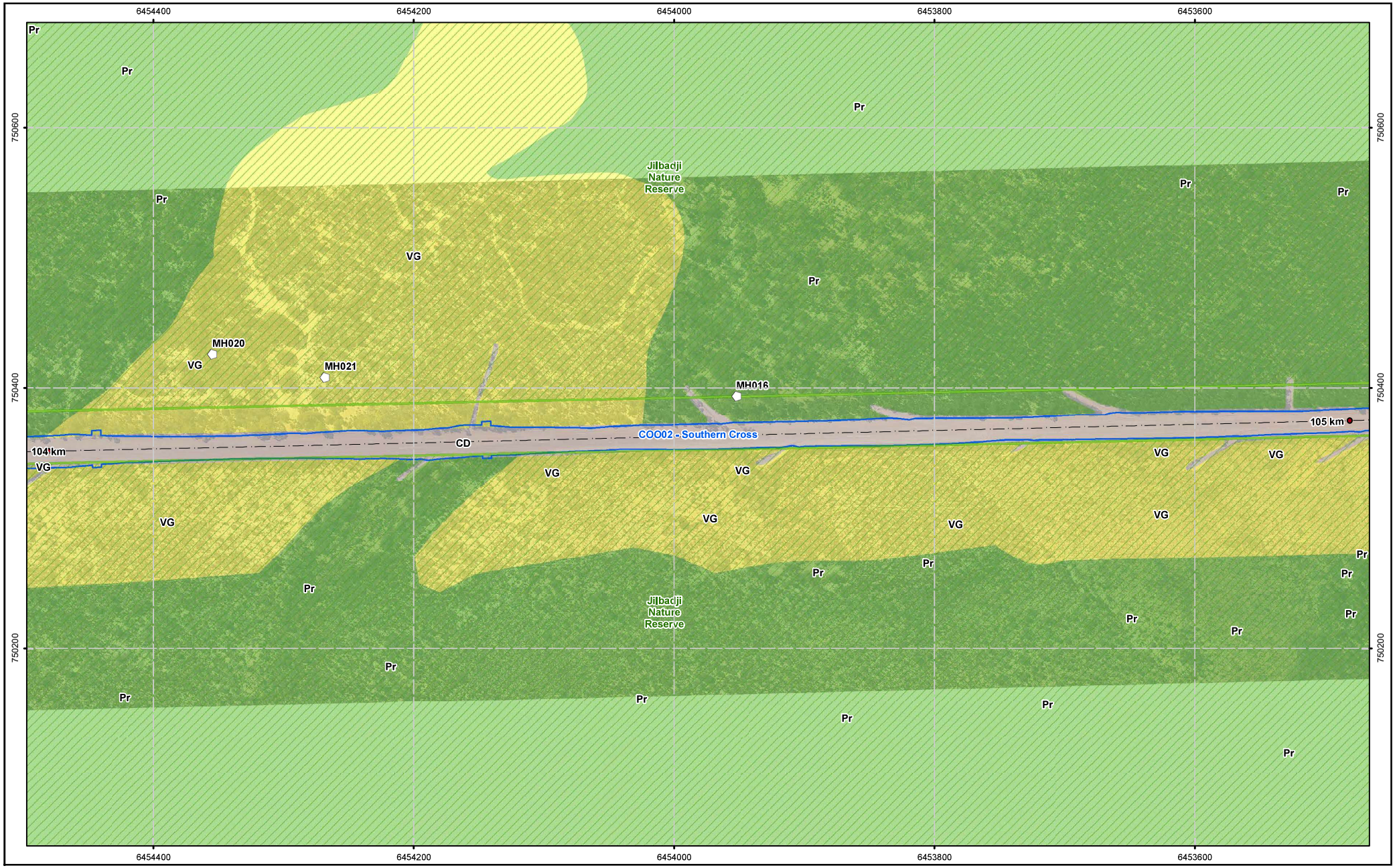
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
VG - Very Good
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 103km to Chn 104km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 104km to Chn 105km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- VG - Very Good
- DBCA Legislated Land

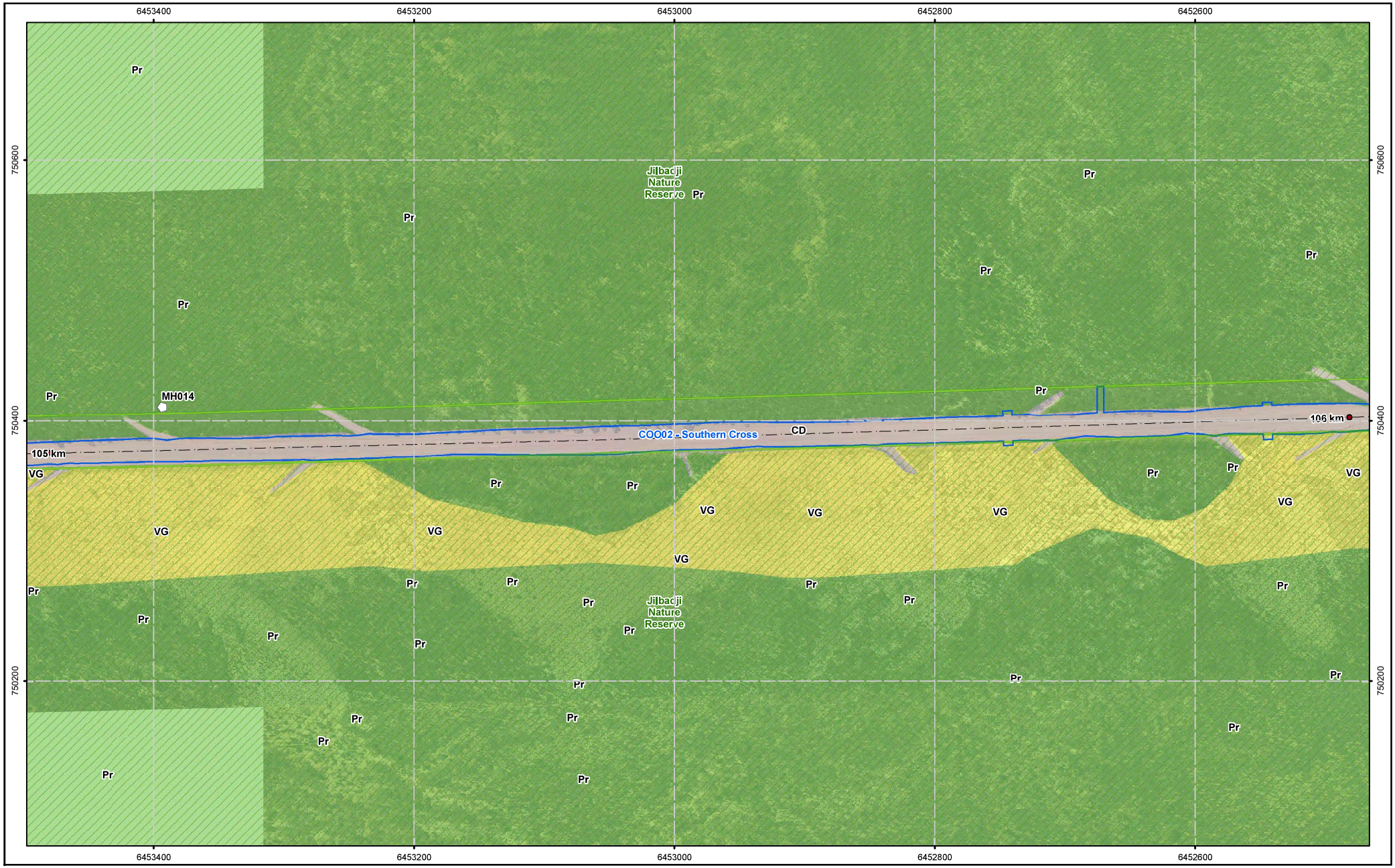
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 104km to Chn 105km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 105km to Chn 106km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

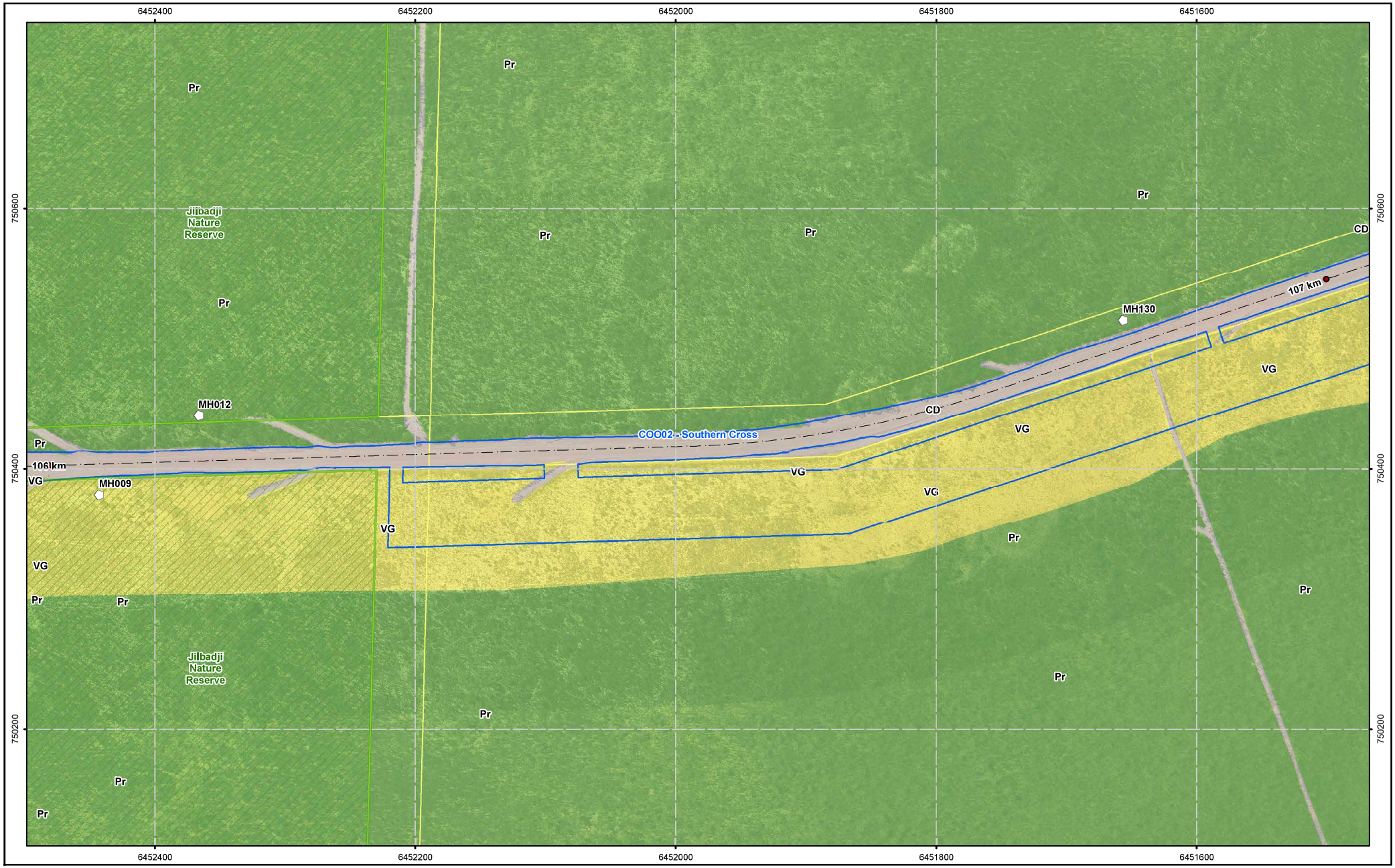
Legend
Quadrat
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
VG - Very Good
DBCA Legislated Land

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 105km to Chn 106km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 106km to Chn 107km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Quadrat
- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- VG - Very Good
- DBCA Legislated Land

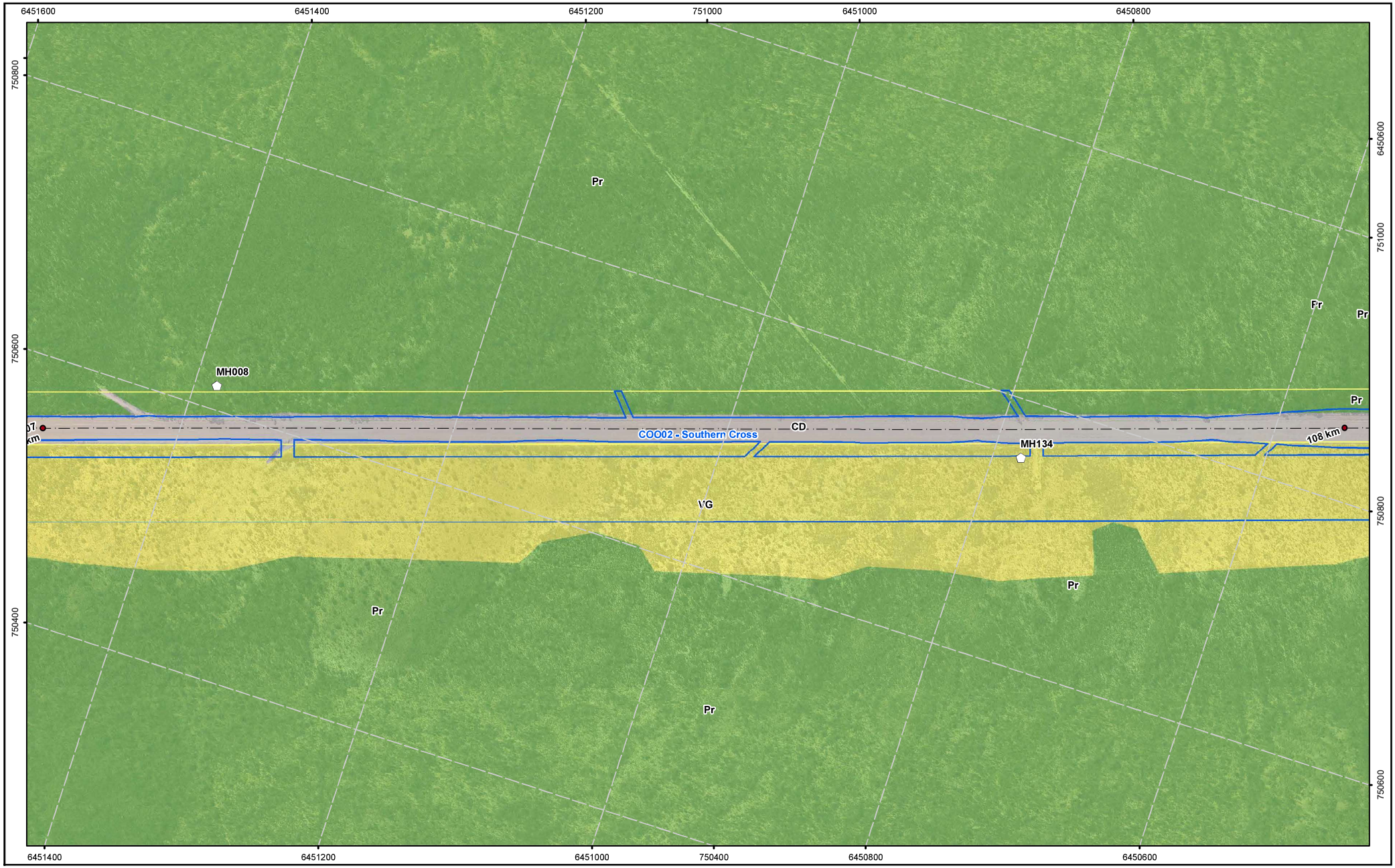
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 106km to Chn 107km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 107km to Chn 108km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline — Previous Clearing Permit Boundary — CD - Completely Degraded — Pr - Pristine
Biogeographic Region — Cadastre — VG - Very Good

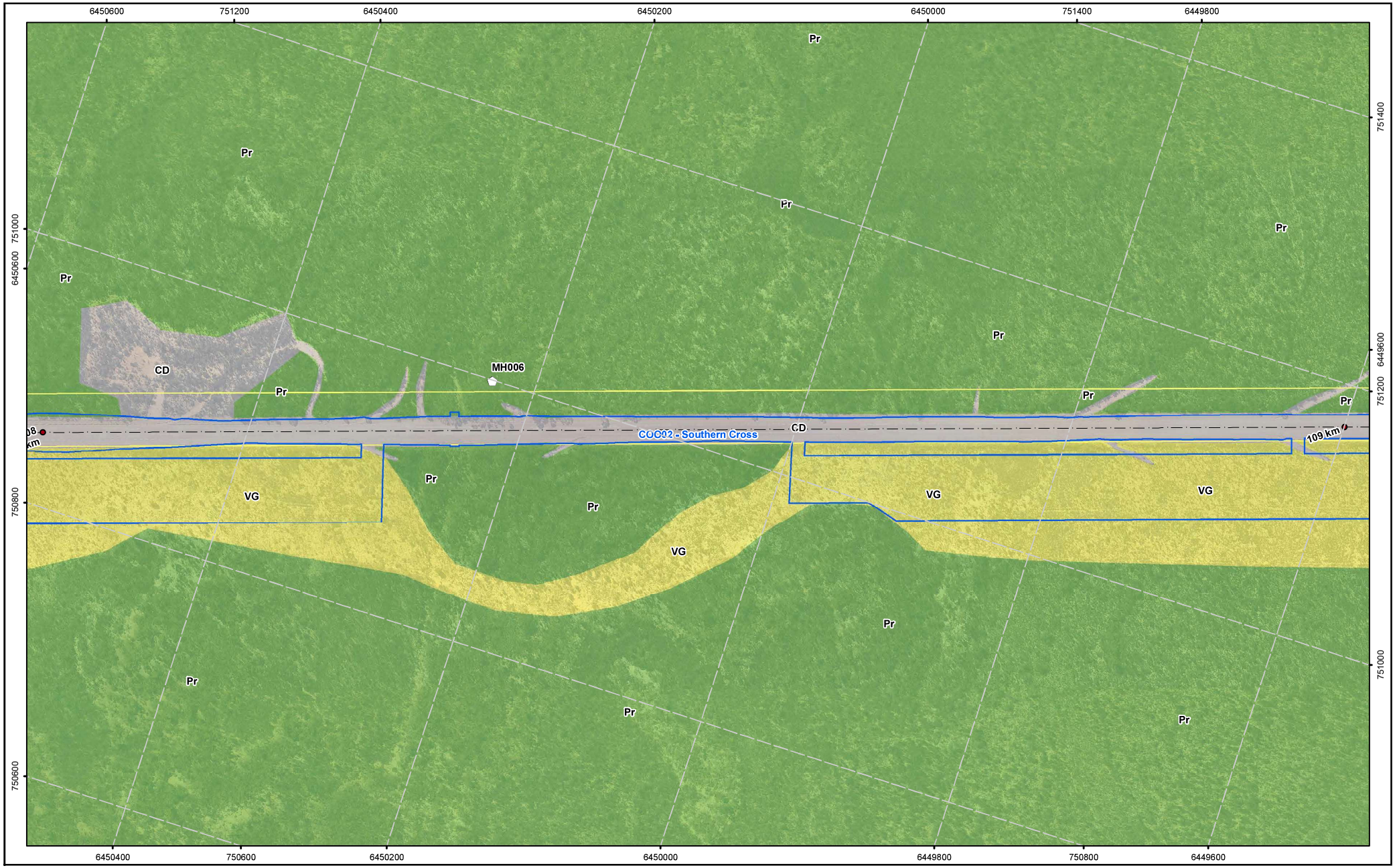
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 107km to Chn 108km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 108km to Chn 109km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline — Previous Clearing Permit Boundary — CD - Completely Degraded — Pr - Pristine
Biogeographic Region — Cadastre — VG - Very Good

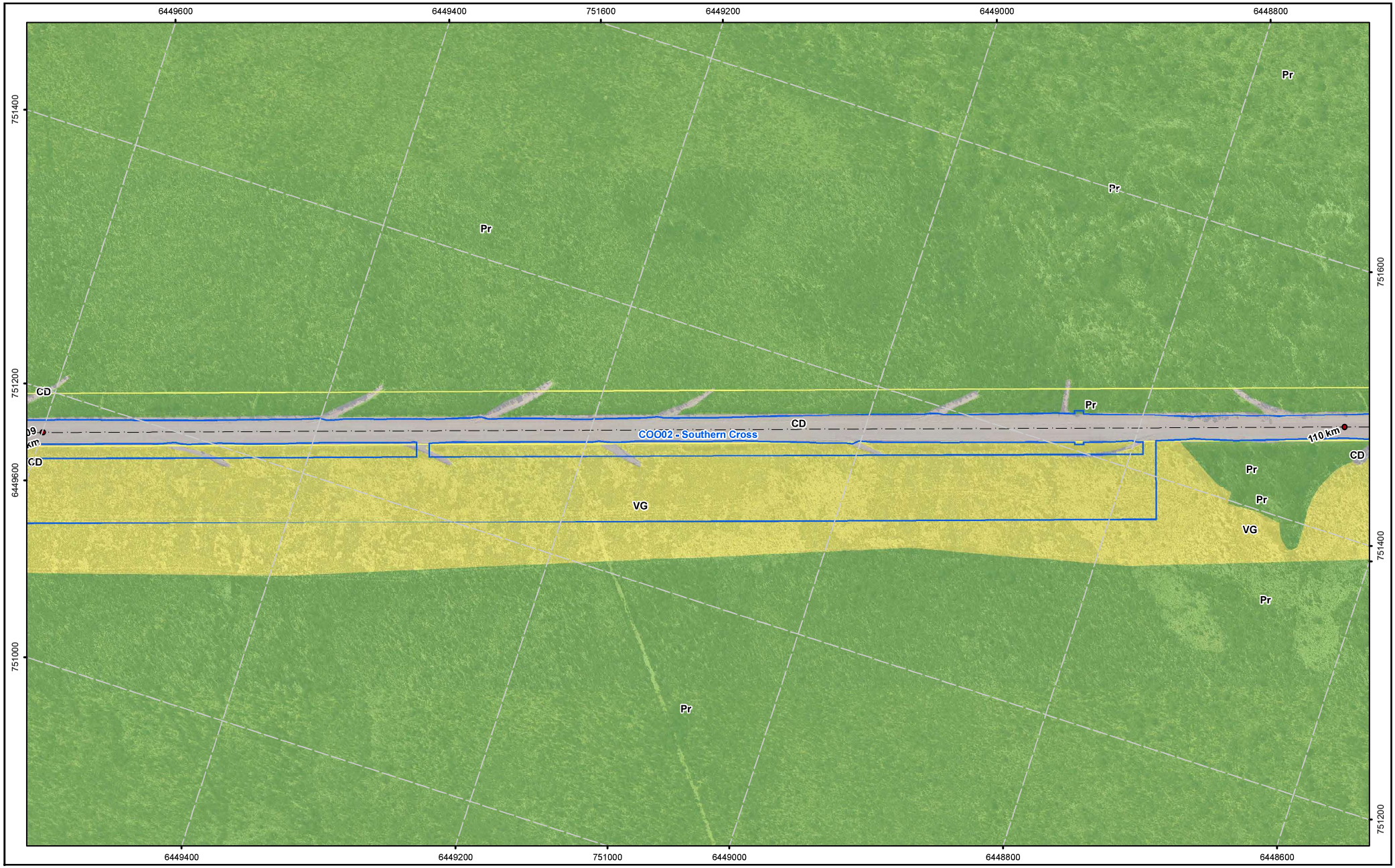
0 100m

Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 108km to Chn 109km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 109km to Chn 110km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

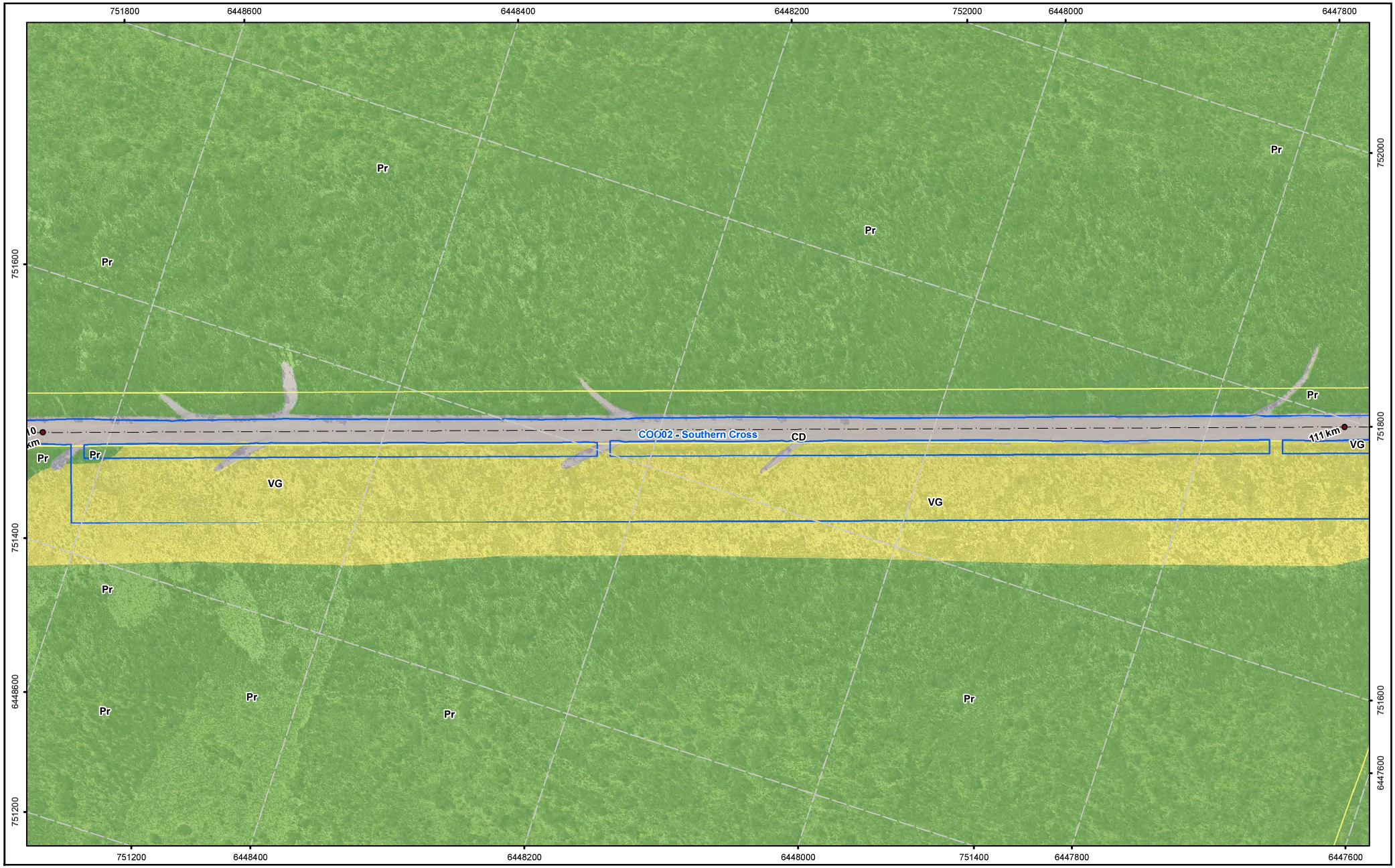
Legend
Road Centreline
Previous Clearing Permit Boundary
CD - Completely Degraded
Pr - Pristine
Biogeographic Region
Cadastre
VG - Very Good

0 100m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 109km to Chn 110km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 110km to Chn 111km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

- Road Centreline
- Previous Clearing Permit Boundary
- CD - Completely Degraded
- Pr - Pristine
- Biogeographic Region
- Cadastre
- VG - Very Good

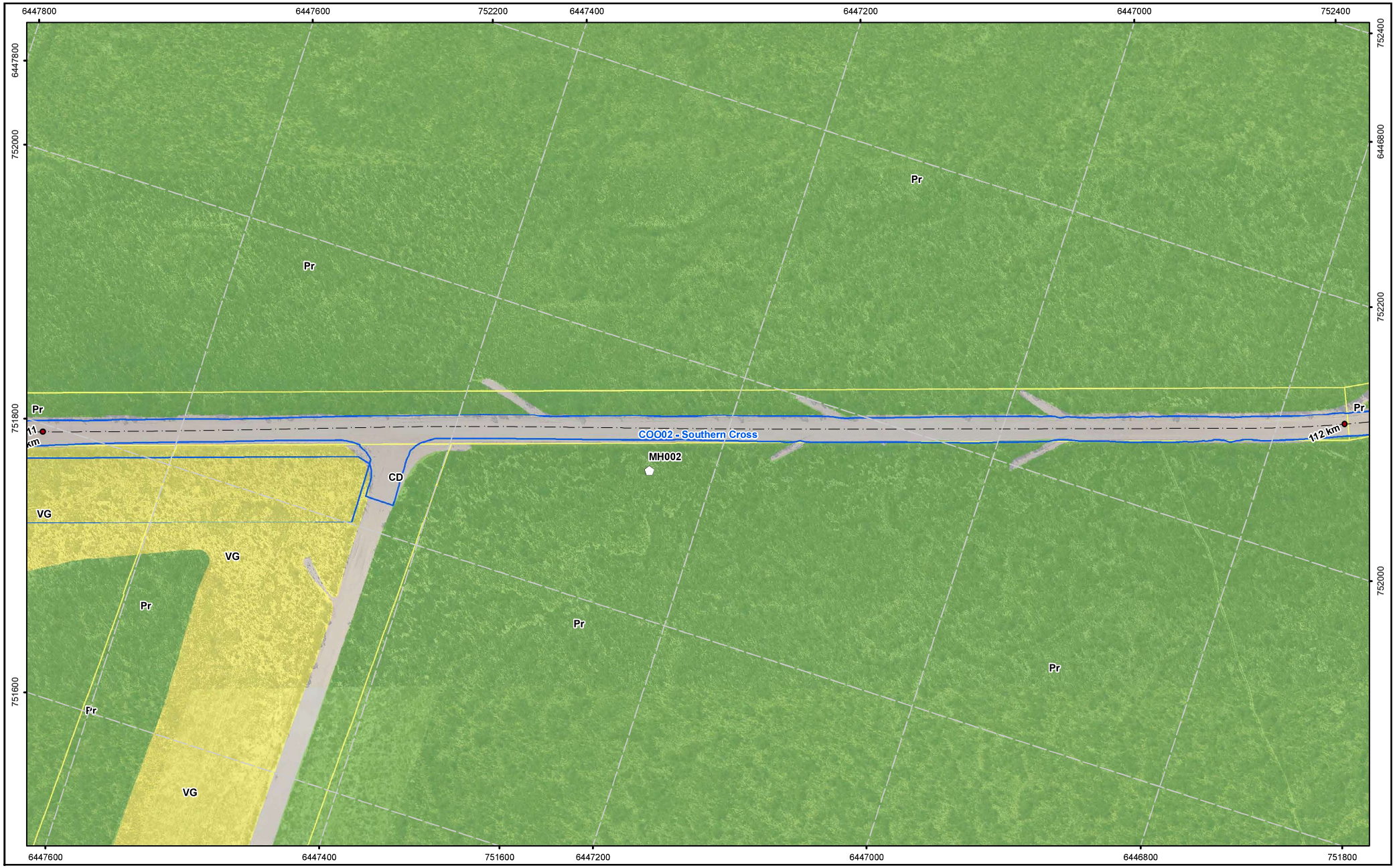
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 110km to Chn 111km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 111km to Chn 112km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend

Quadrat · - Road Centreline — Previous Clearing Permit Boundary — CD - Completely Degraded — Pr - Pristine
Biogeographic Region — Cadastre — VG - Very Good

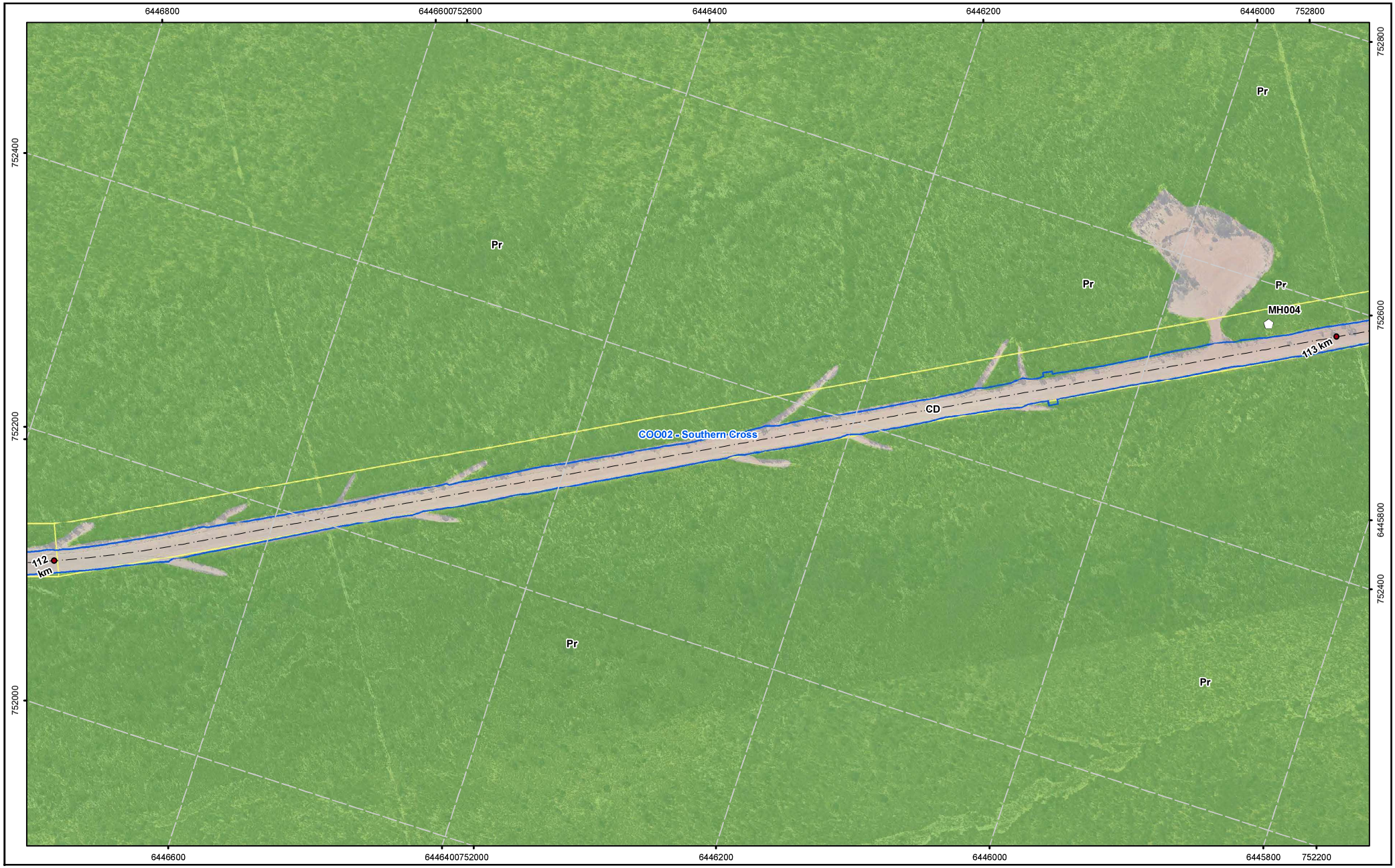
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Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 111km to Chn 112km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Chn 112km to Chn 113km



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

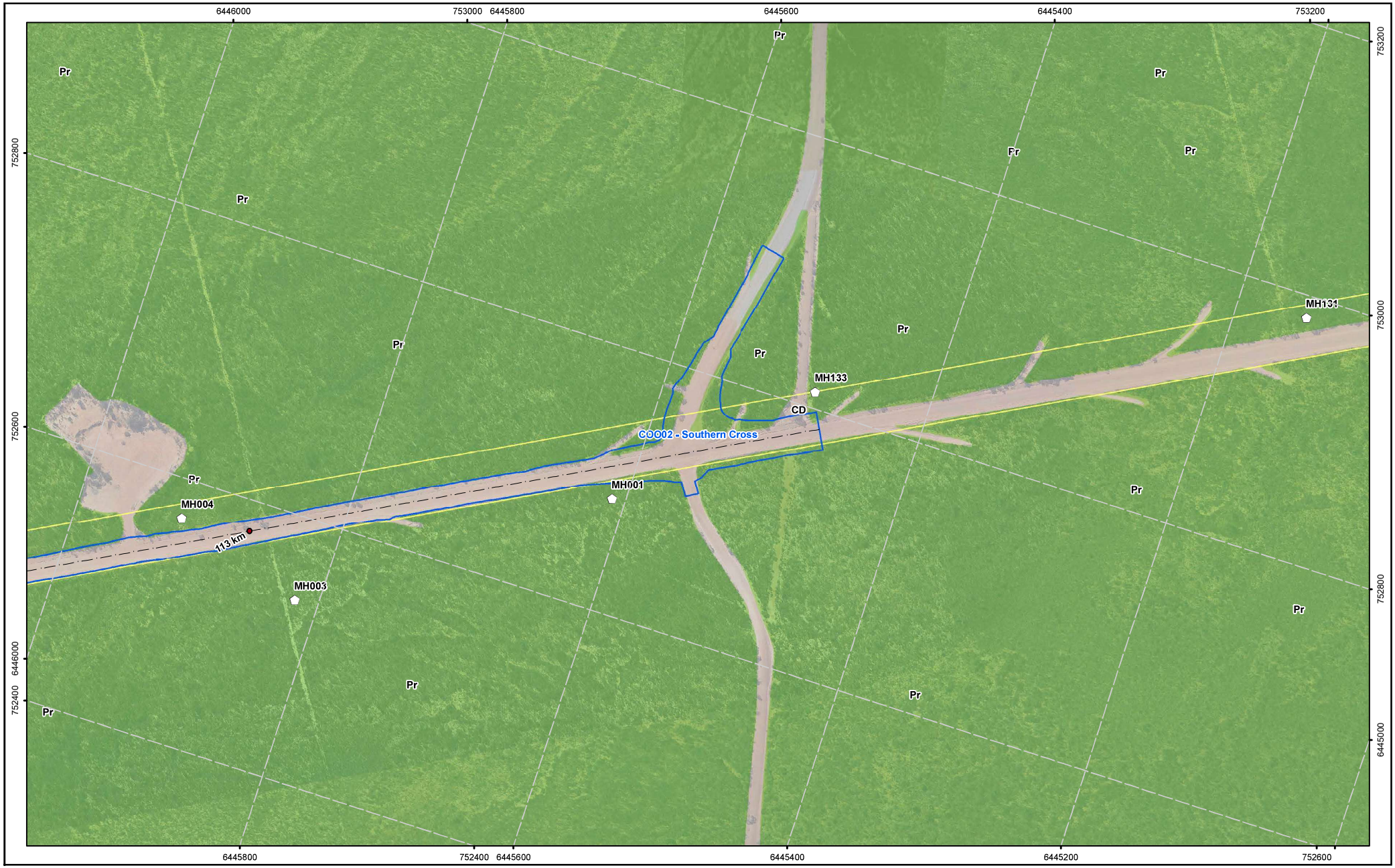
Legend
Quadrat · - Road Centreline Previous Clearing Permit Boundary CD - Completely Degraded Pr - Pristine
Biogeographic Region Cadastre

0 100 m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Chn 112km to Chn 113km

Yilgarn Shire Council - Upgrade of Parkers Range Road and part of Marvel Loch-Forrestonia Road

Proposed TEC Clearing Permit - Vegetation Condition - Marvel Loch - Forrestonia Road - Connection to EGLP Access Road



Drawn: CAD Resources (08 9246 3242), Date: Mar 2024,
CAD Ref: a2765_MR_MTH_51_03, A3, Rev: B
Source: Cadastre: Landgate
Proposed Clearing Boundary exagerated for clarity

Legend
Quadrat - Road Centreline Previous Clearing Permit Boundary CD - Completely Degraded Pr - Pristine
Biogeographic Region Cadastre

0 100 m
Scale: 1:2,750
MGA94 (Zone 50)

Marvel Loch - Forrestonia Road
Connection to EGLP Access Road

Appendix 7. Priority Flora maps of the Entire Study Area

Legend – Priority Flora

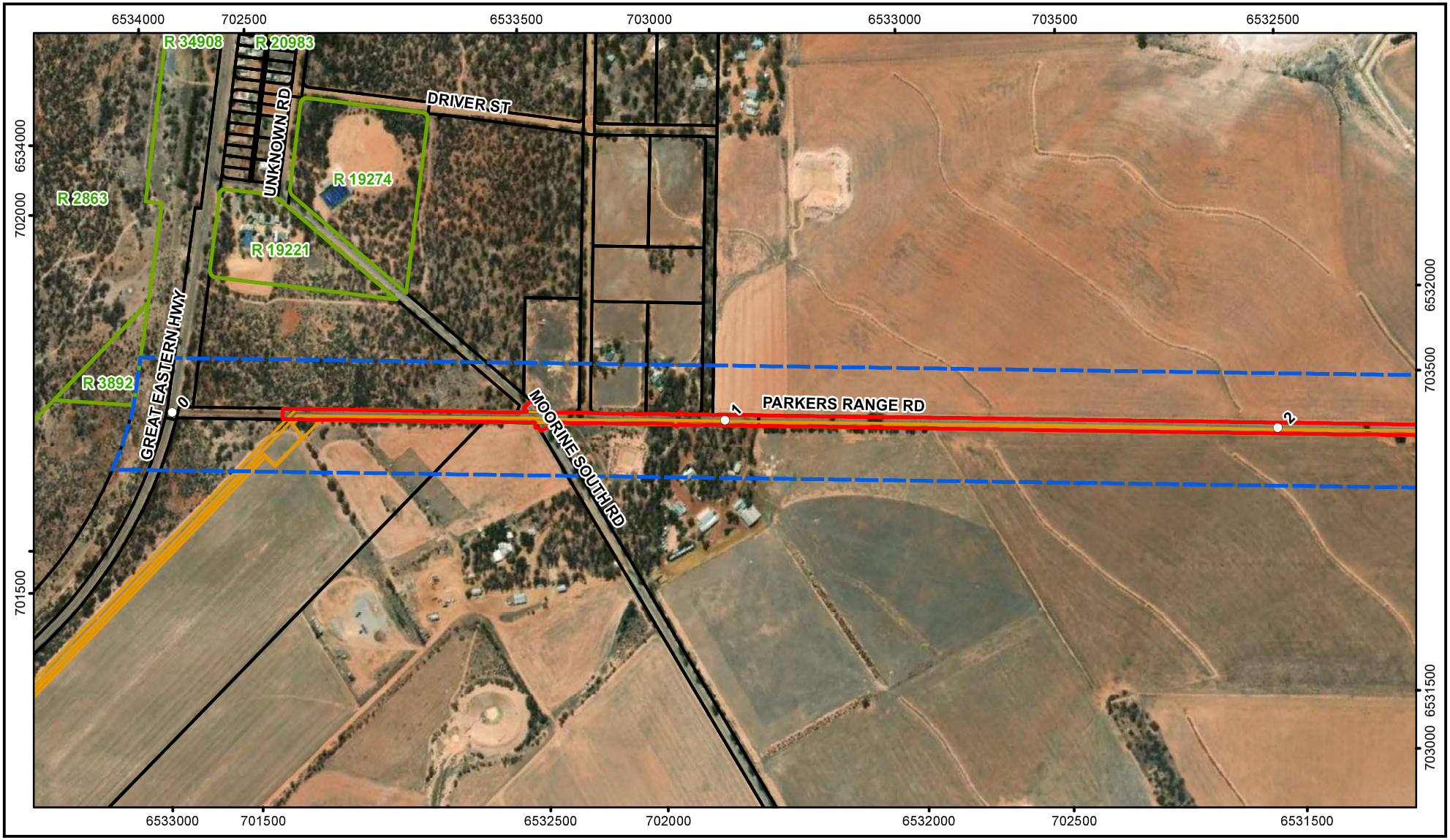
WA Cons Status	Abbreviation	Taxon Name
Priority 1		
P1	Ala	*Acacia lachnocarpa*
P1	Afo	*Acacia* sp. Forrestania (D. Angus DA 3001)
P1	Ahy	*Alyogyne* sp. Hyden (G. Durell 127)
P1	Bcr	*Balaustion grandibracteaum* subsp. *juncturum* P2 (formerly *Baeckea* sp. *Crossroads* (B.L. Rye & M.E. Trudgen 241186) P1)
P1	Bst	*Brachyloma stenolobum*
P1	Cmh	*Chamelaucium* sp. Mt Holland (G. Cockerton & G. Grigg 780) currently curated within *Chamelaucium* sp. Parker Range ((B.H. Smith 1255) P1
P1	Cpr	*Chamelaucium* sp. Parker Range (B.H. Smith 1255)
P1	Dca	*Dicrastylis capitellata*
P1	Dwi	*Drummondita wilsonii*
P1	Euc	*Eucalyptus calycogona* subsp *miraculum*
P1	Edr	*Eucalyptus* urna subsp. xesta (syn. E. sp. Dunbar Road (D. Nicolle & M. French DN 5466))
P1	Eni	*Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898)
P1	Gha	*Gastrolobium hians*
P1	Gli	*Grevillea lissopleura*
P1	Gma	*Grevillea marriottii*
P1	Hen	*Hemigenia* sp. Newdegate (E. Bishop 75)
P1	Hmh	*Hibbertia* sp. Mt Holland (B. Ellery BE 1437)
P1	Htu	*Hibbertia tuberculata*
P1	Lro	*Labichea rossii*
P1	Lja	*Lepidosperma* sp. ?*jacksonense* (P1) GC-021
P1	Meg	*Melaleuca grieveana*
P1	Mec	*Melichrus* sp. Coolgardie (K.R. Newbey 8698)
P1	Mie	*Microcorys elatoides*
P1	Mih	*Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927)
P1	Mip	*Microcorys* sp. Parker Range (C. Hancock s.n. PERTH 09215123)
P1	Pmt	*Phebalium* sp. Mt Gibbs (G.F. Craig 6658)
P1	Rfb	*Rinzia fimbriolata*
P1	Rmd	*Rinzia medifila*
P1	Sva	*Stylidium validum*
P1	Tsa	*Thryptomene salina*
P1	Thy	*Thryptomene* sp. Hyden (B.J. Lepschi & L.A. Craven 4477)
Priority 2		
P2	Aas	*Acacia asepala*
P2	Aco	*Acacia concolorans*
P2	Bgj	*Balaustion grandibracteatum* subsp. *junctura*
P2	Dor	*Dampiera orchardii*
P2	Dsr	*Daviesia sarissa* subsp. *redacta*
P2	Euh	*Eutaxia hirsuta*
P2	Eul	Eutaxia lasiocalyx

WA Cons Status	Abbreviation	Taxon Name
P2	Hpe	*Halgania* sp. Peak Eleanora (M.A. Burgman 3547 B)
P2	Lme	*Lepidium merrallii*
P2	Lyl	*Leucopogon* sp. Yellowdine (M. Hislop & F. Hort MH 3194)
P2	Lna	*Logania nanophylla*
P2	Meo	*Melaleuca ochroma*
P2	Oll	*Olearia laciniifolia*
P2	Ore	*Orianthera exilis*
P2	Pys	*Phebalium* sp. Yerilgee Sandplain (J. Jackson 223)
P2	Vms	*Verticordia multiflora* subsp. solox
Priority 3		
P3	Acr	*Acacia crenulata*
P3	Aun	*Acacia undosa*
P3	Bgg	*Balaustion grandibracteatum subsp. grandibracteatum*
P3	Btp	*Boronia ternata var. promiscua*
P3	Cci	*Chorizema circinale*
P3	Cyc	*Cryptandra crispula*
P3	Eex	*Eucalyptus exigua*
P3	Epo	*Eucalyptus polita subsp. ocreta*
P3	Eus	*Eutaxia acanthoclada*
P3	Gci	*Gompholobium cinereum*
P3	Hap	*Hakea pendens*
P3	Hib	*Hibbertia glabriuscula*
P3	Mid	*Mirbelia densiflora*
P3	Noi	*Notisia intonsa*
P3	Phd	*Phebalium drummondii*
P3	Prn	*Prostanthera nanophylla*
P3	Rto	*Rinzia torquata*
P3	Rtr	*Rinzia triplex*
P3	Sad	*Seringia adenogyna*
P3	Sse	*Stylidium sejunctum*
P3	Tdi	*Teucrium diabolicum*
P3	Vgr	*Verticordia gracilis*
P3	Vmi	*Verticordia mitodes*
P3	Vst	*Verticordia stenopetala*
Priority 4		
P4	Bsh	*Banksia shanklandiorum*
P4	Ebi	*Eremophila biserrata*
P4	Ecm	*Eremophila caerulea subsp. merrallii*
P4	Ein	*Eremophila inflata*
P4	Gne	*Grevillea neodissecta*
P4	Gyd	*Gyrostemon ditrigynus*
P4	Mif	*Microcorys* sp. Forrestania (V. English 2004)
P4	Myp	*Myriophyllum petraeum*
P4	Sbr	*Stenanthemum* aff. *bremerense* (WB40845)
P4	Wb	*Wurmbea murchisoniana*

Northern Section 10197/1

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 0 km to 2 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Reserves
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 2 km to 4 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

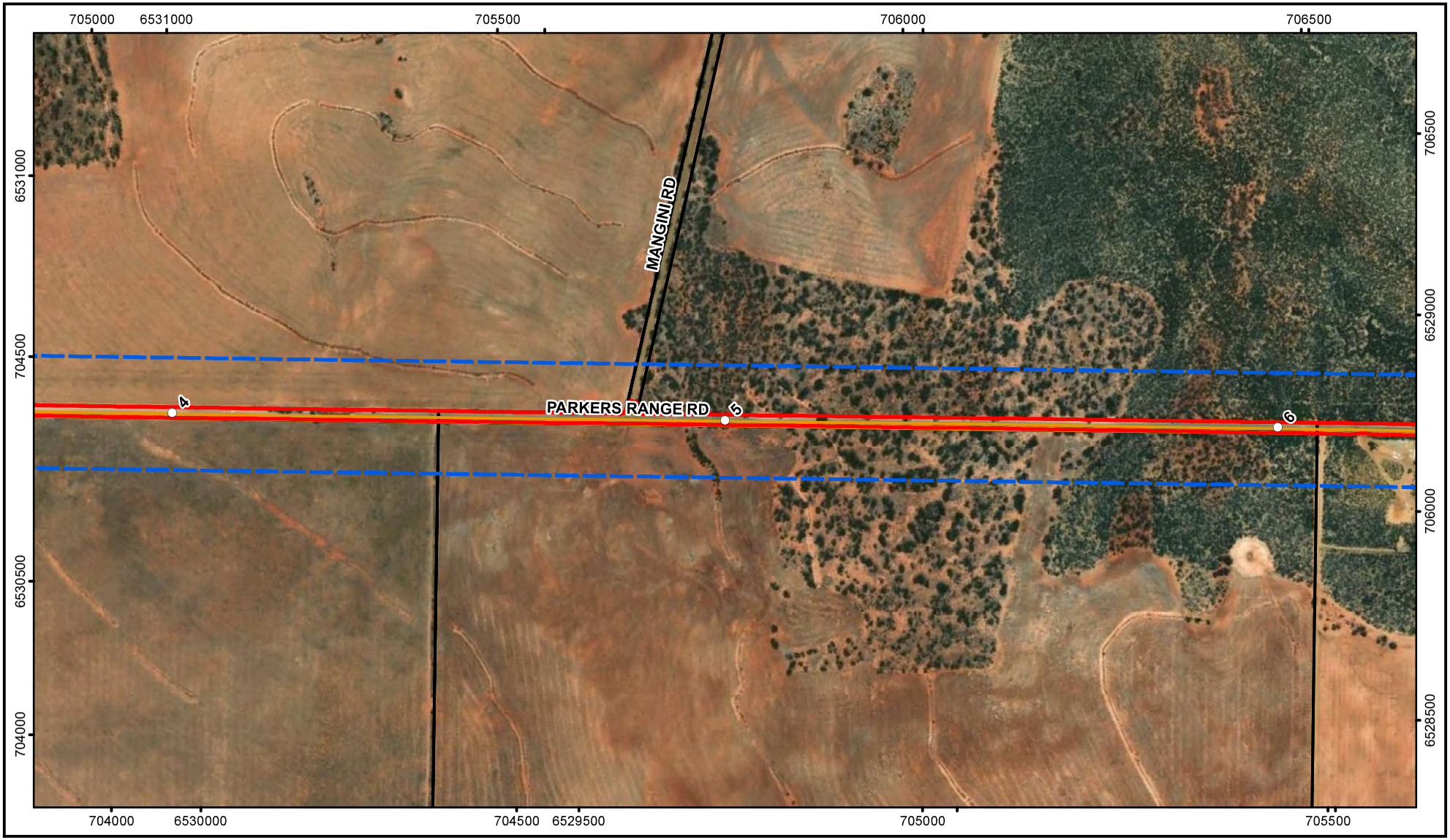
Legend
- Centreline Chainage *Priority Species* P4, Gne
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 4 km to 6 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

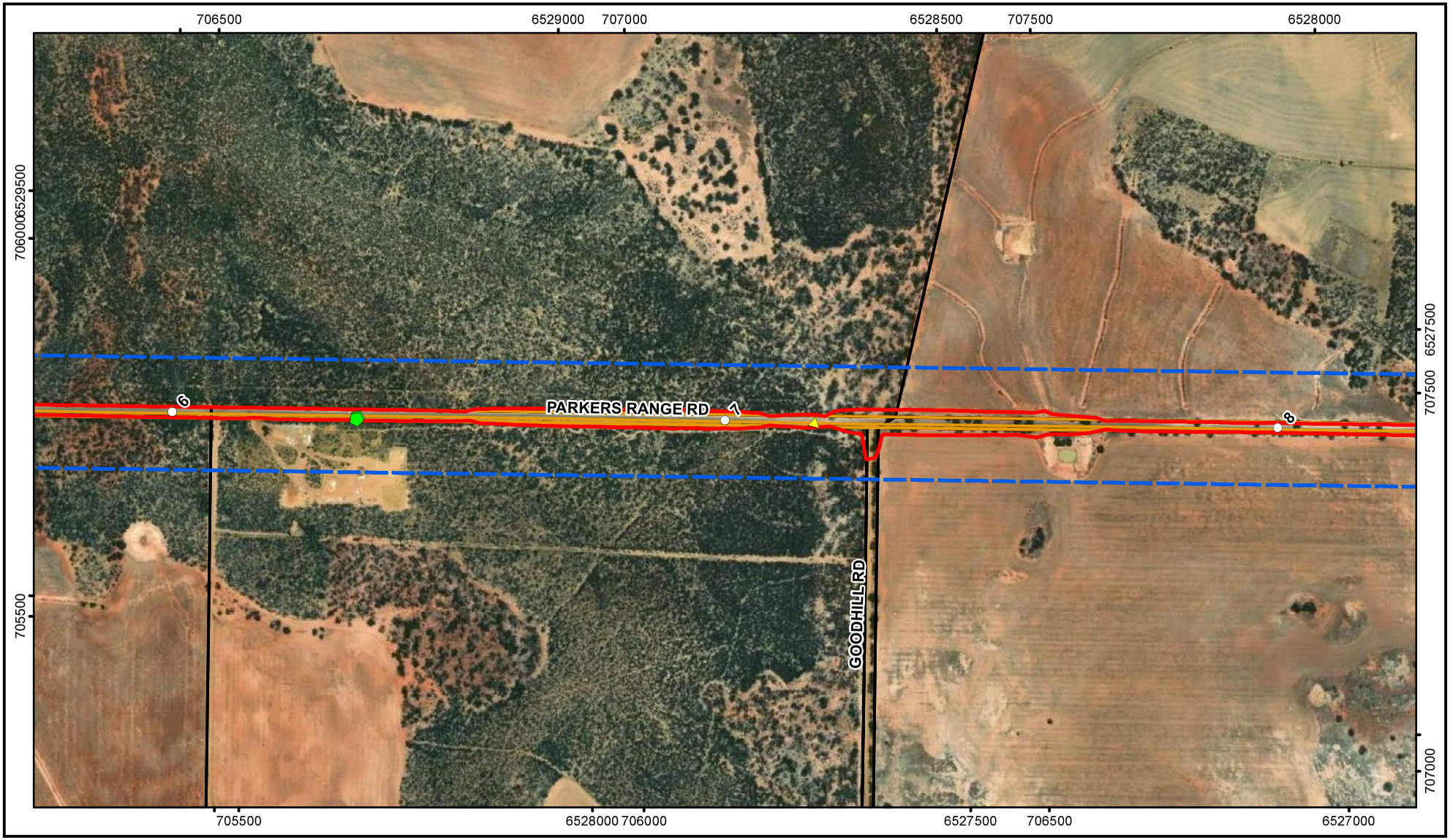
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 6 km to 8 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

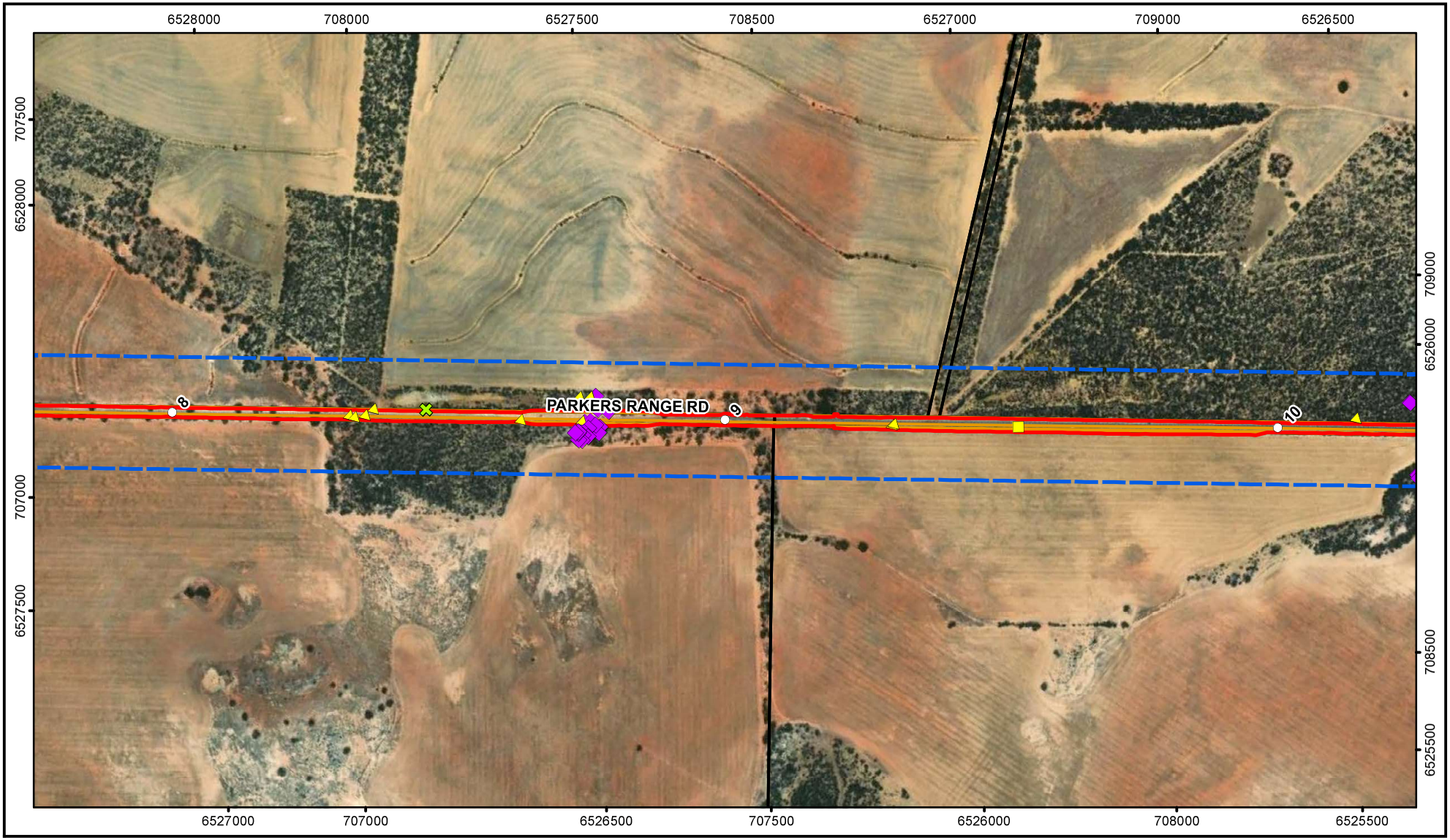
Legend
- Centreline Chainage *Priority Species* P1, Rfb P3, Rtr
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 8 km to 10 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

Priority Species

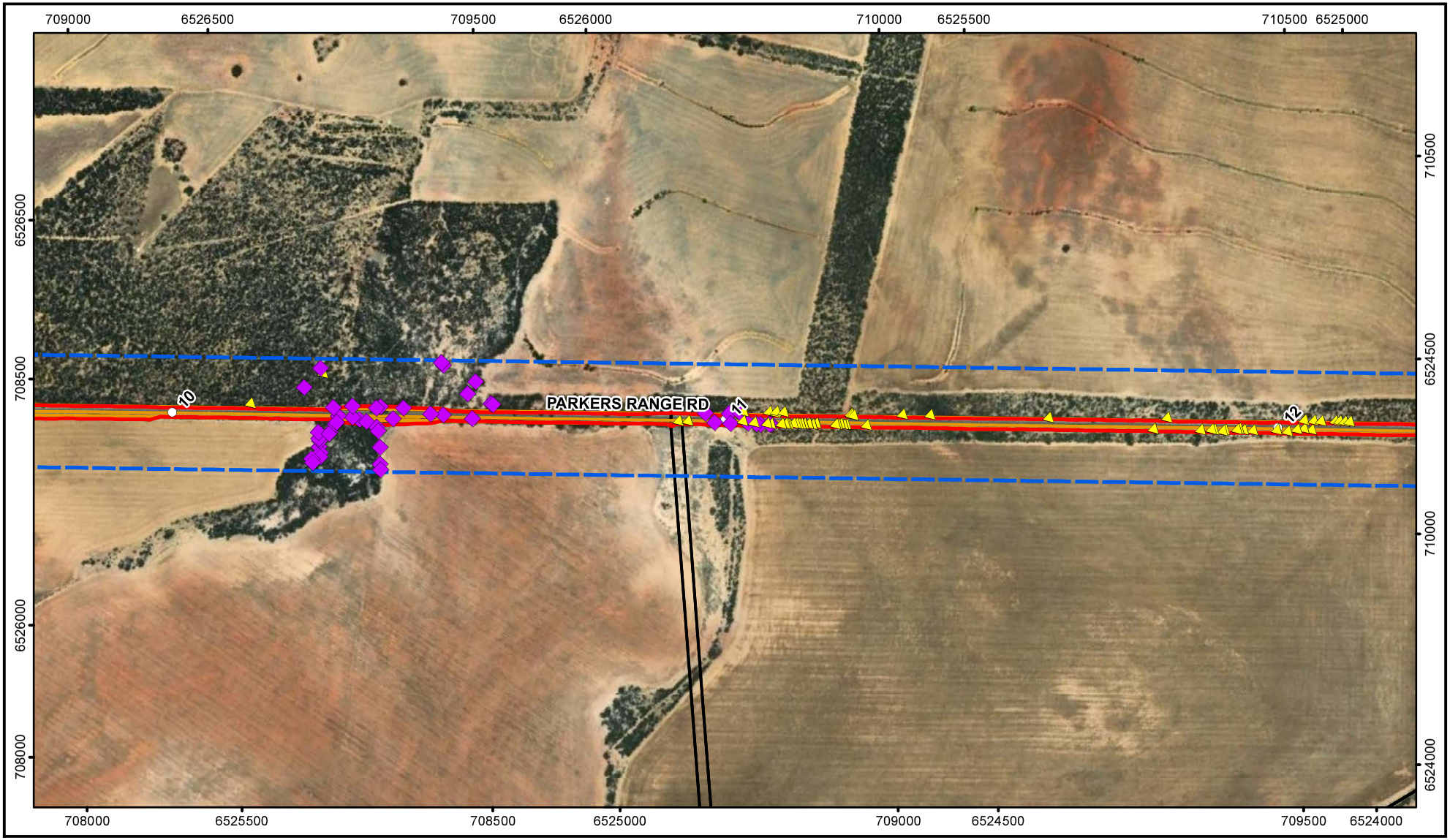
- P1, Lja
- P2, Aco
- P3, Acr
- P3, Rtr

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 10 km to 12 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- *Priority Species*
- P3, Acr
- P3, Rtr
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 12 km to 14 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- *Priority Species* P2, Aco P3, Rtr
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 14 km to 16 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

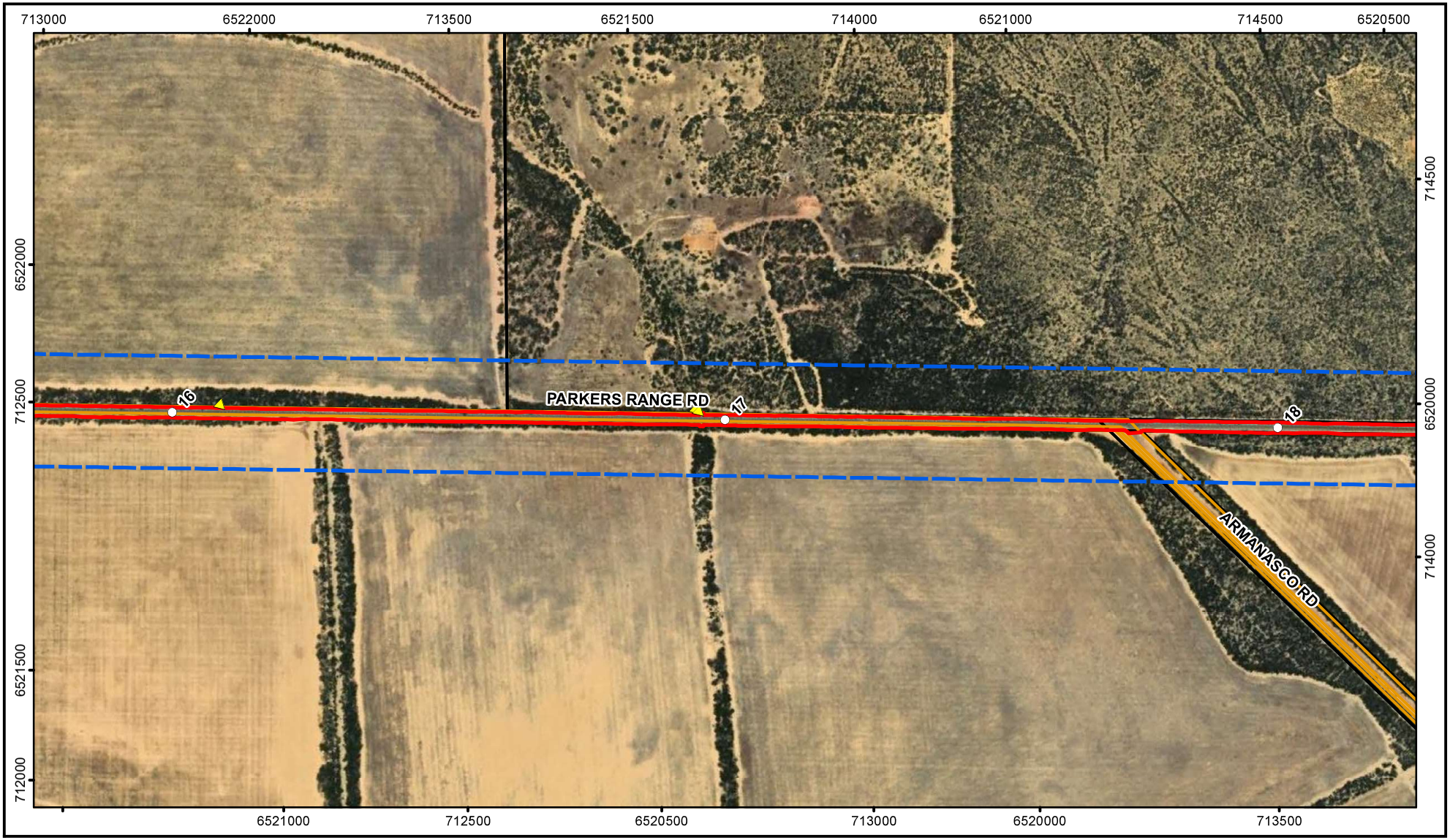
Legend
- Centreline Chainage *Priority Species* P3, Rtr
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 16 km to 18 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

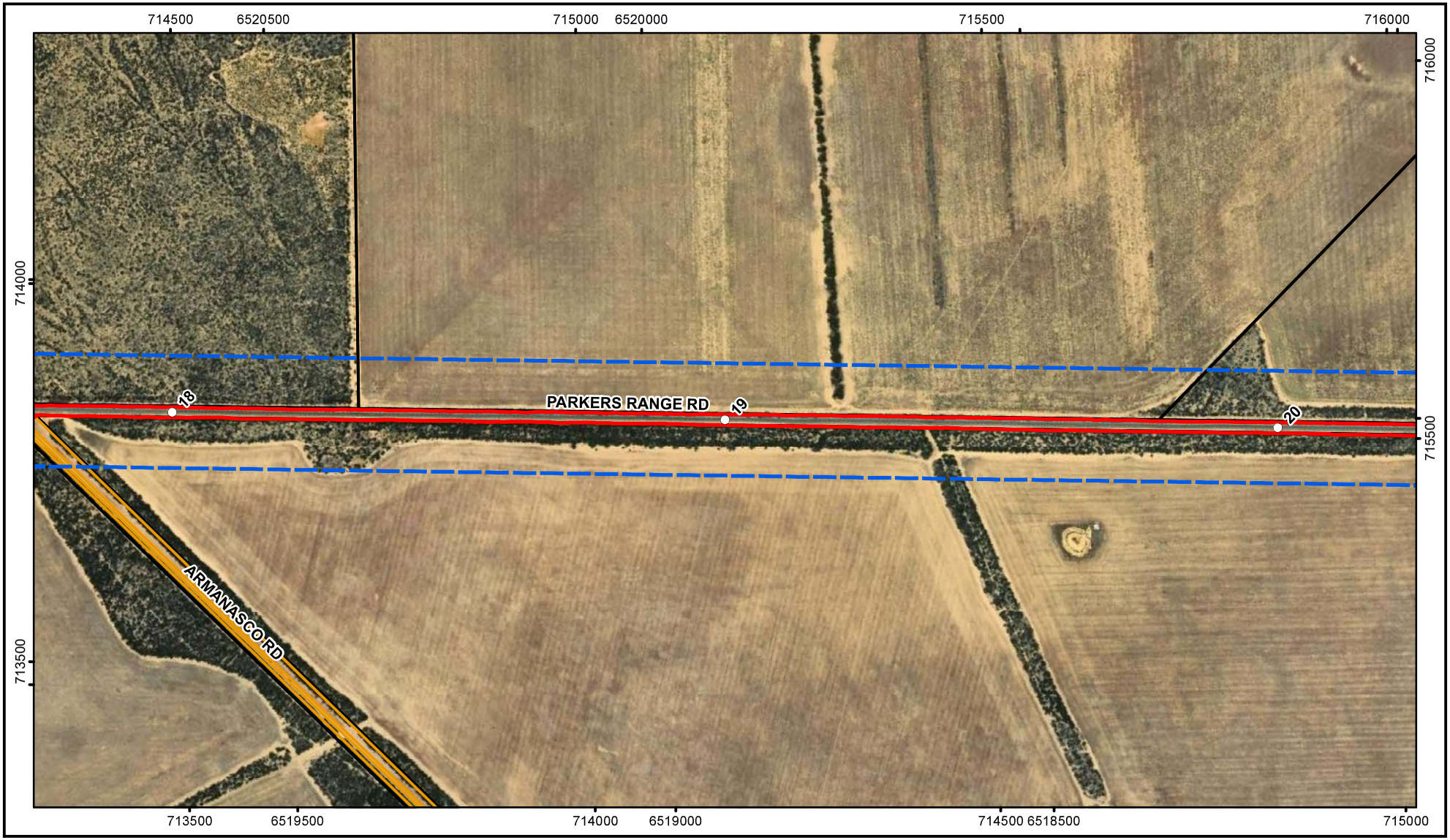
Legend
- Centreline Chainage *Priority Species* P3, Rtr
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 18 km to 20 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

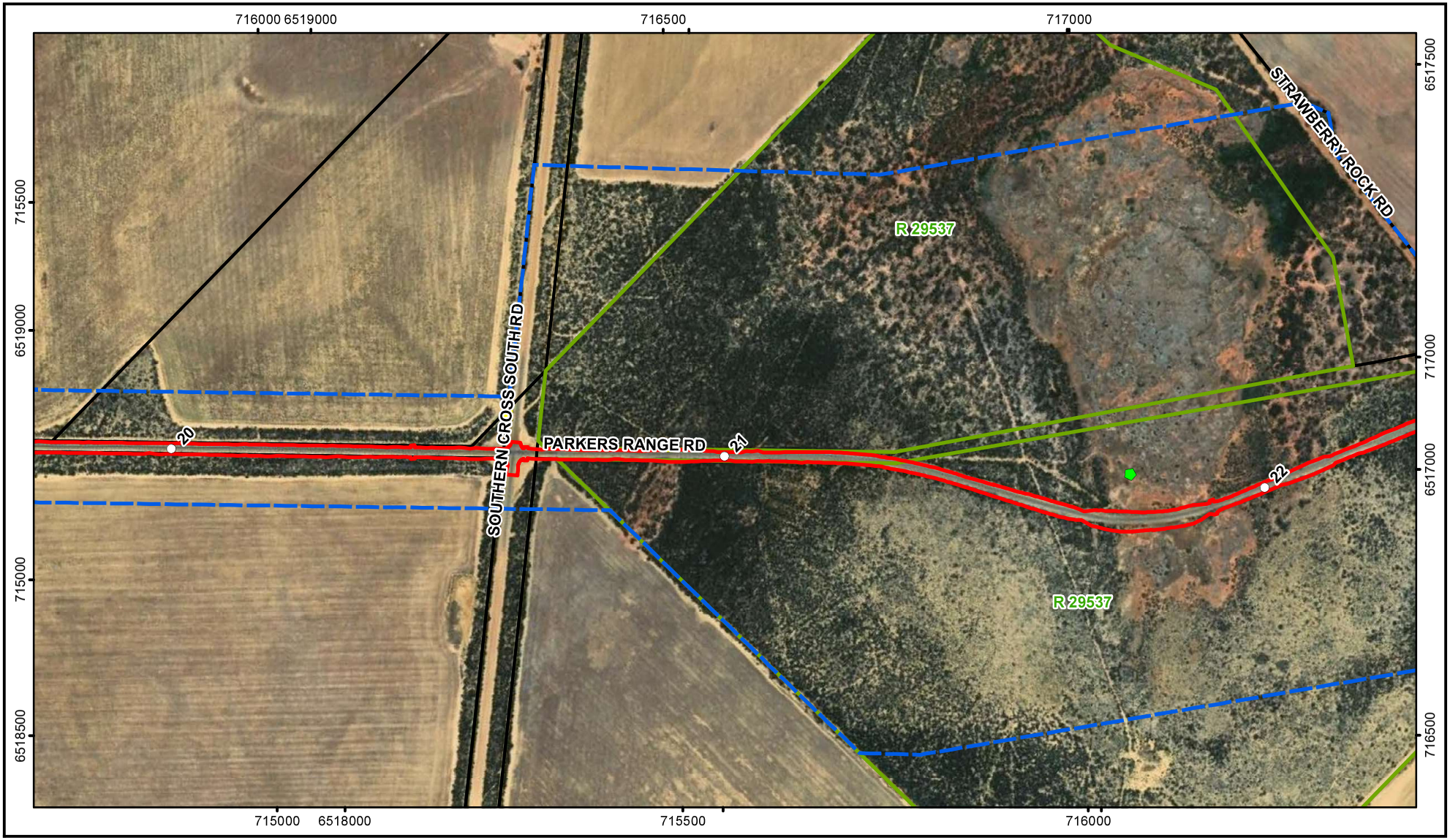
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 20 km to 22 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

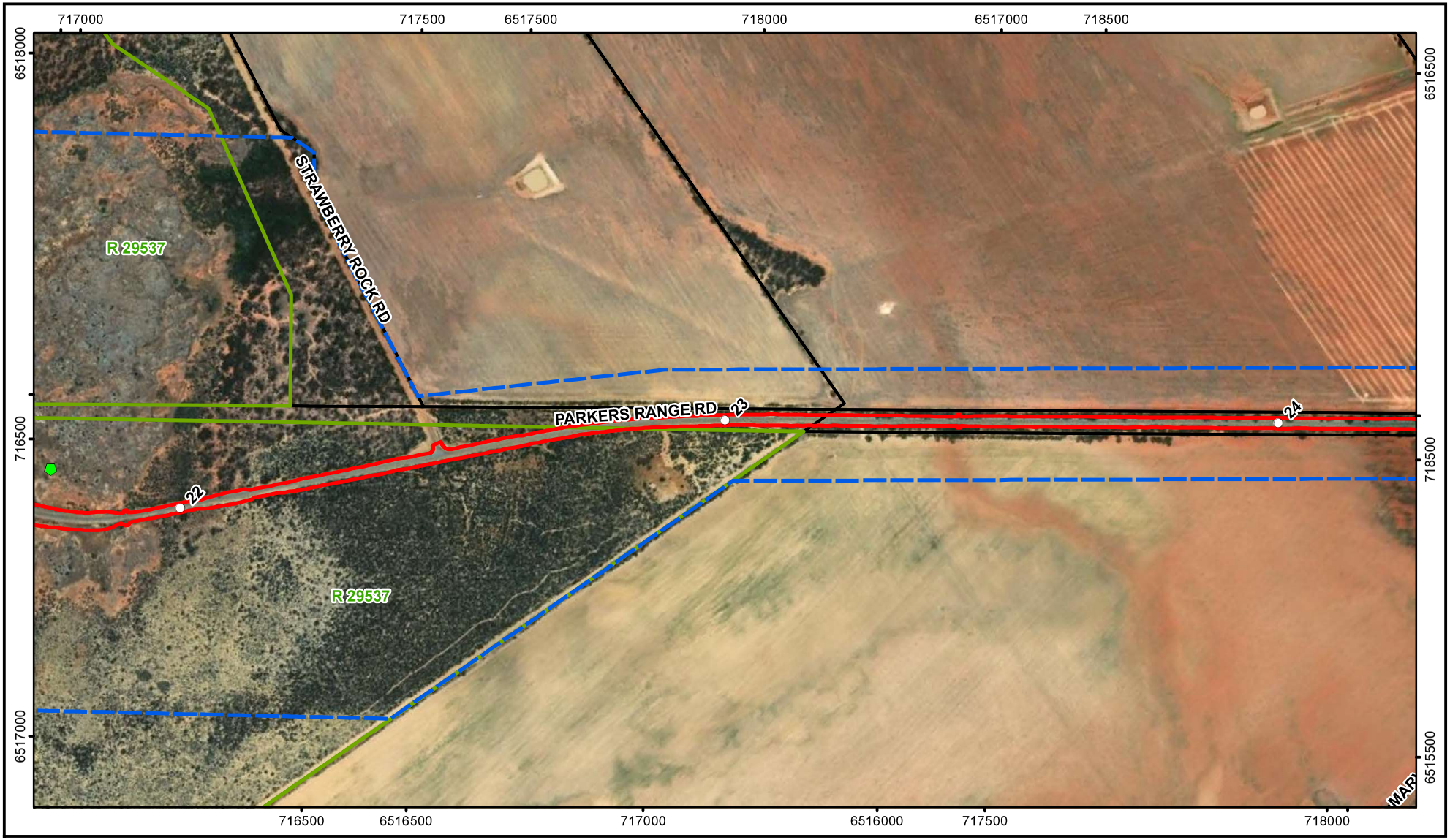
Legend
Centreline Chainage
CPS 10197/1
Survey Limit
Reserves
Cadasta Bdry
Priority Species P2, Aco P4, Wb

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 22 km to 24 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
Centreline Chainage
CPS 10197/1
Survey Limit
Reserves
Cadasta Bdry
Priority Species P4, Wb

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 24 km to 26 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

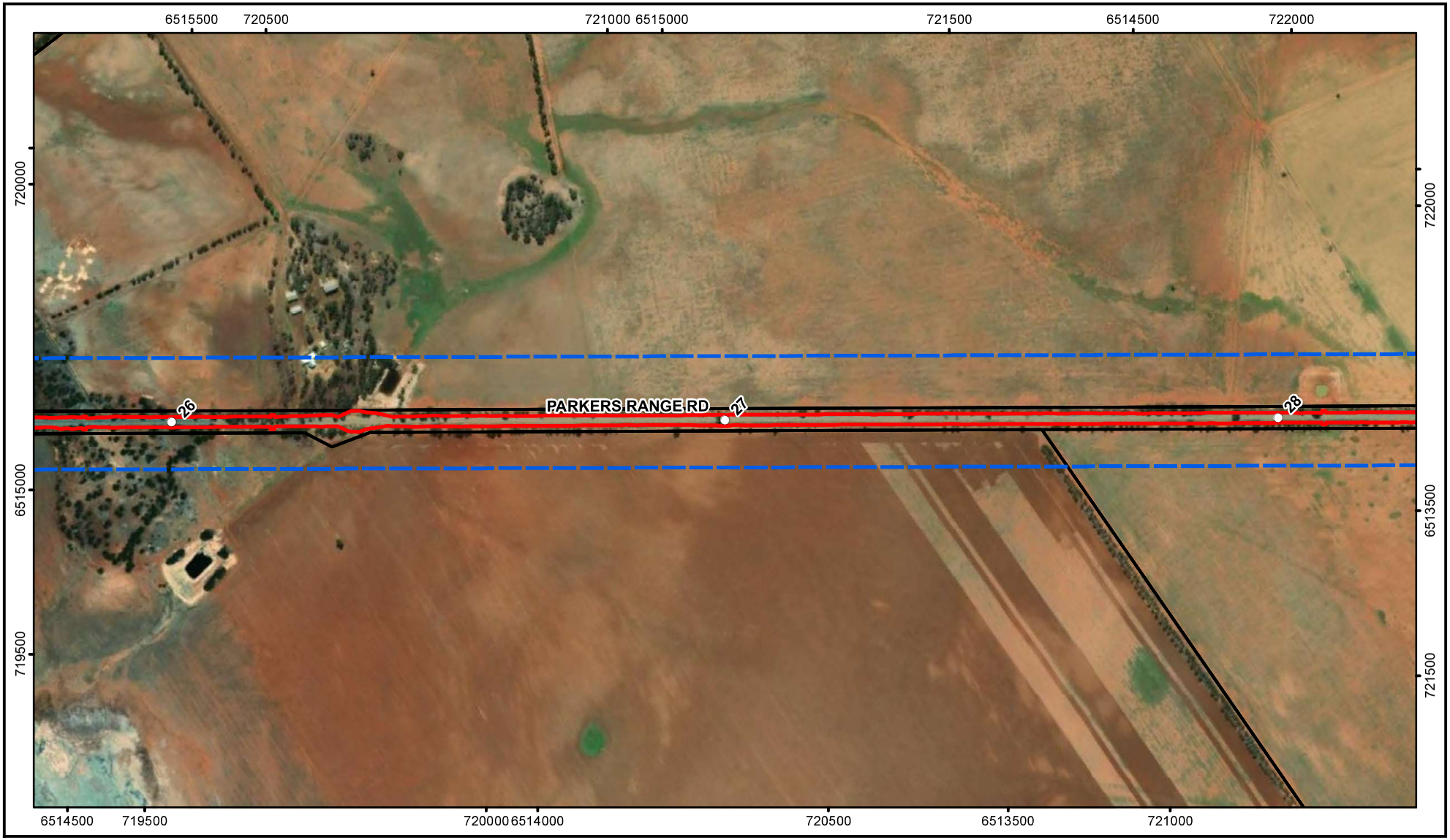
Legend
- Centreline Chainage
- *Priority Species* P2, Eul P3, Epo
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 26 km to 28 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

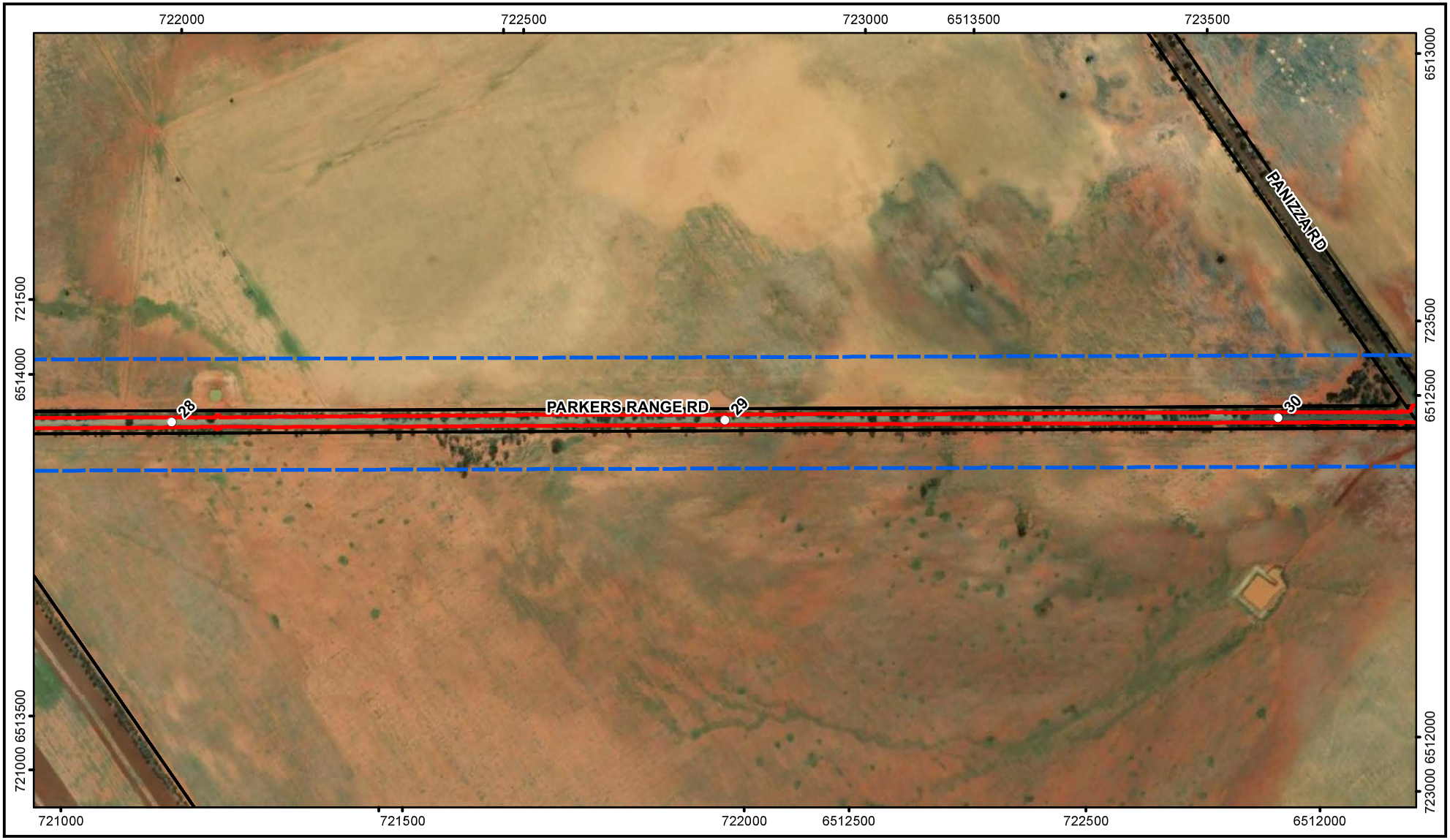
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 28 km to 30 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

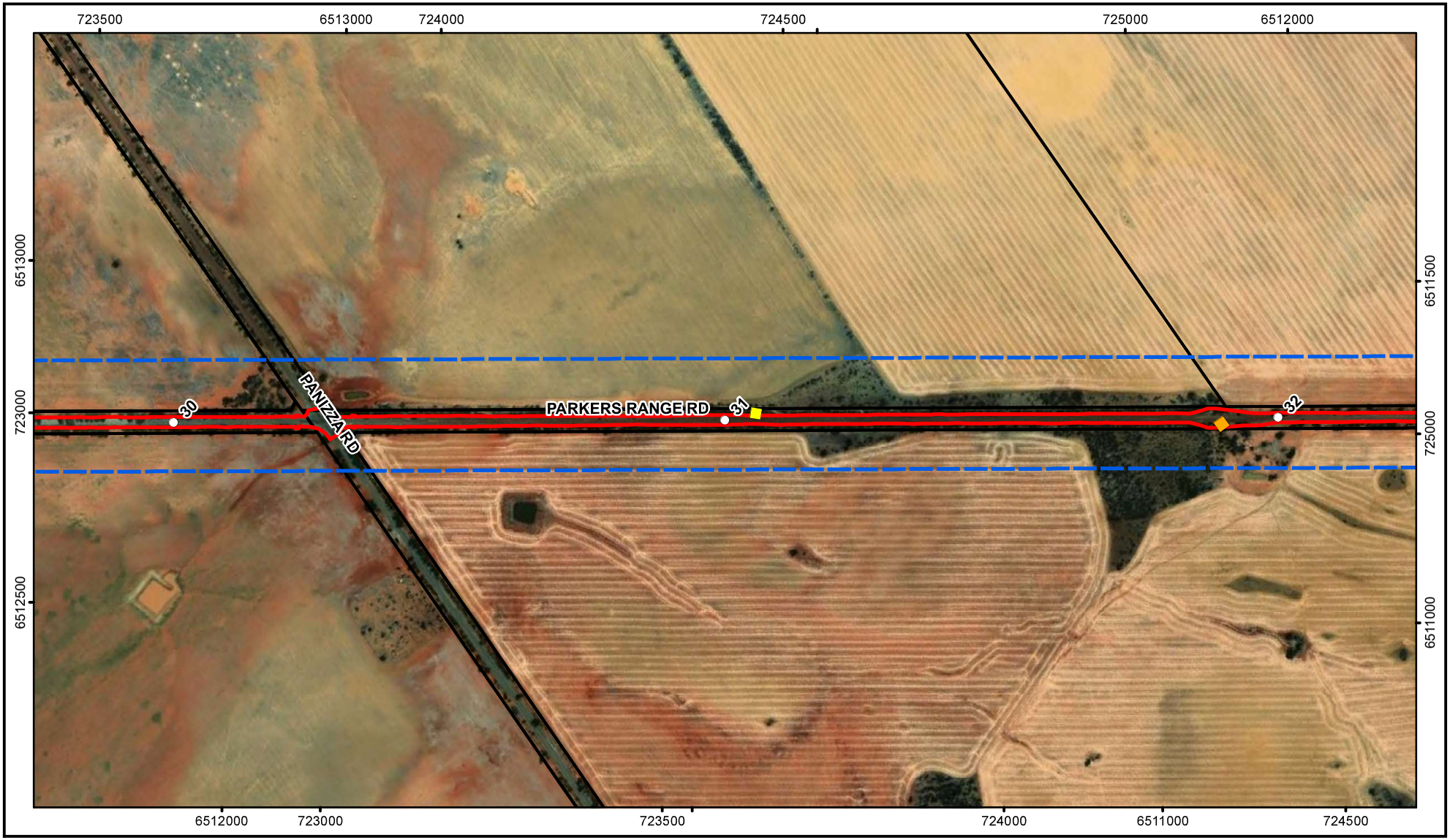
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 30 km to 32 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- *Priority Species*
- P2, Aco
- P2, Eul
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 32 km to 34 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage *Priority Species* P2, Eul
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 34 km to 36 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

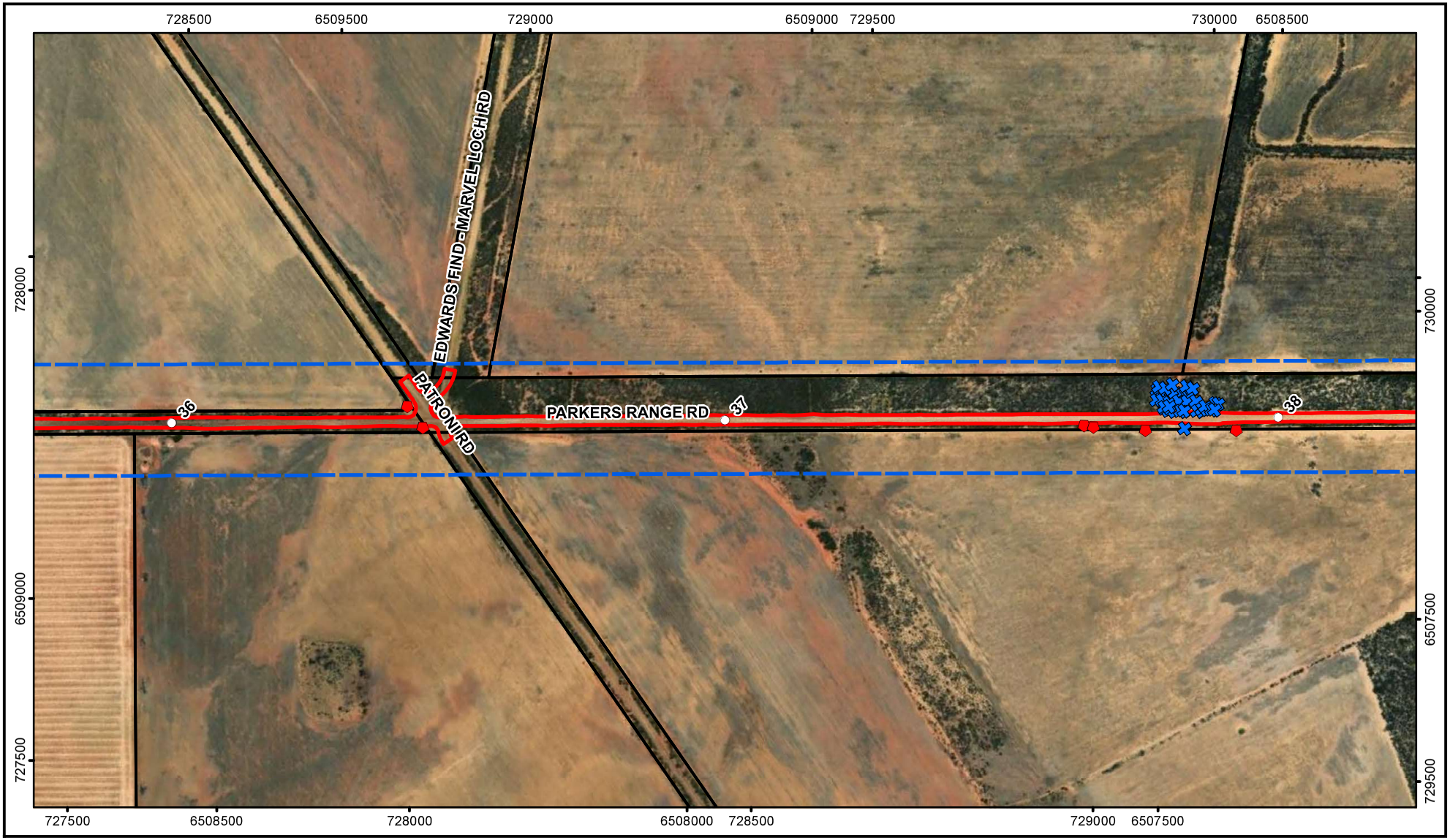
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 36 km to 38 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

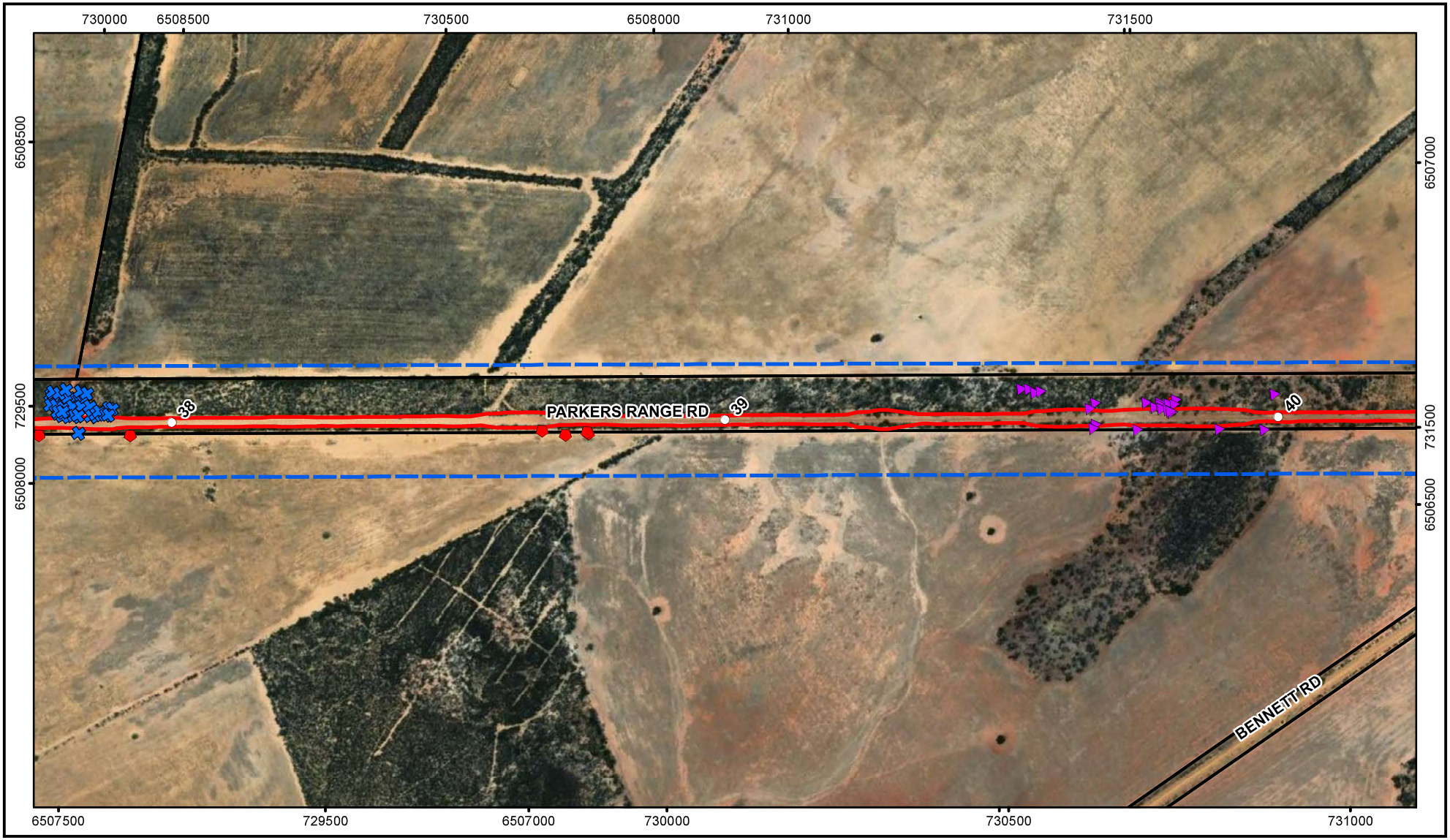
Legend
- Centreline Chainage
- *Priority Species*
- P1, Meg
- P4, Gne
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 38 km to 40 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

Priority Species
- P1, Meg
- P3, Hap
- P4, Gne

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 40 km to 42 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- *Priority Species*
- P3, Hap
- P3, Rtr
- P4, Gne
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 42 km to 44 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

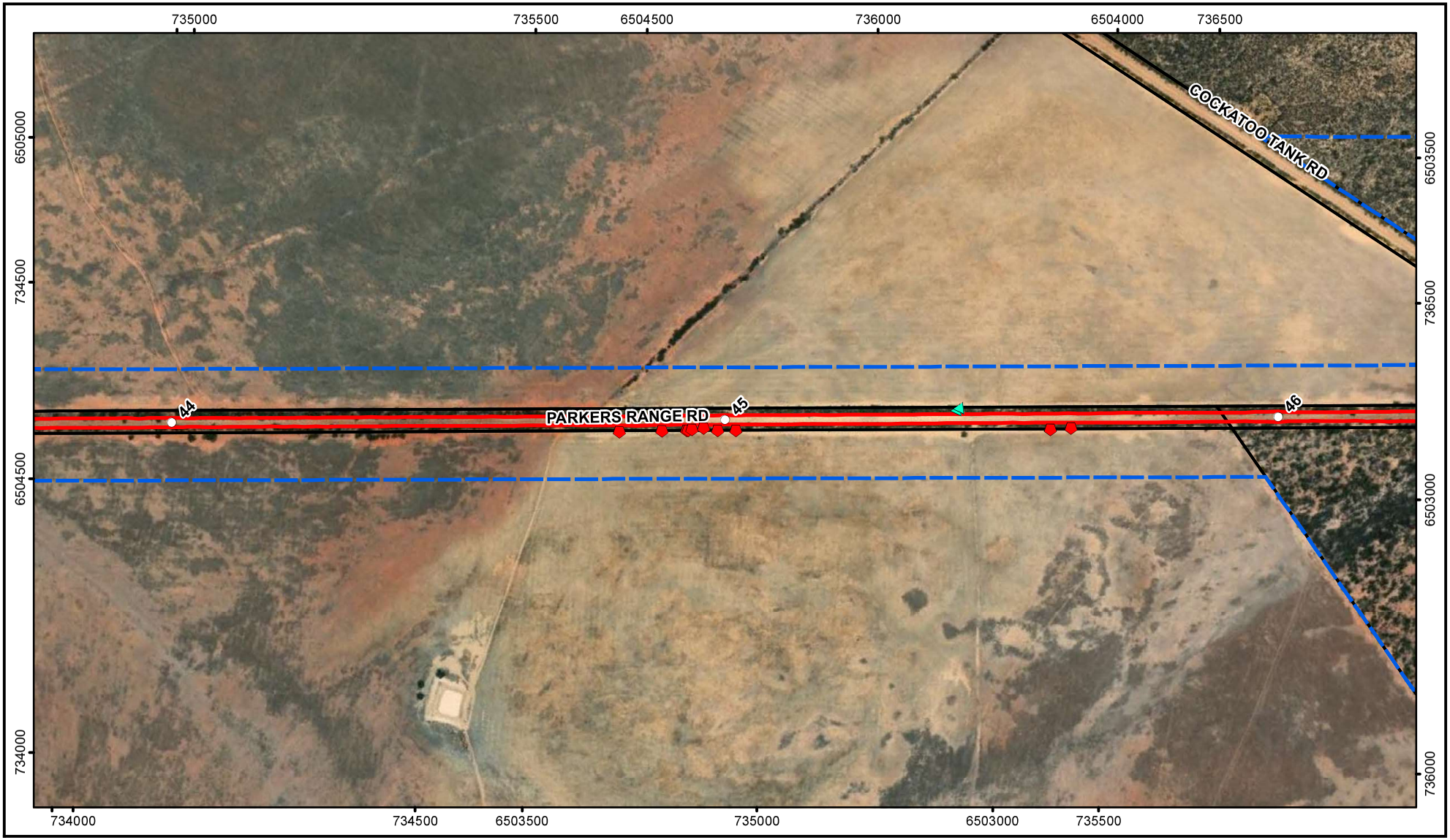
Legend
- Centreline Chainage
- *Priority Species*
- P3, Eex
- P3, Phd
- P4, Gne
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 44 km to 46 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

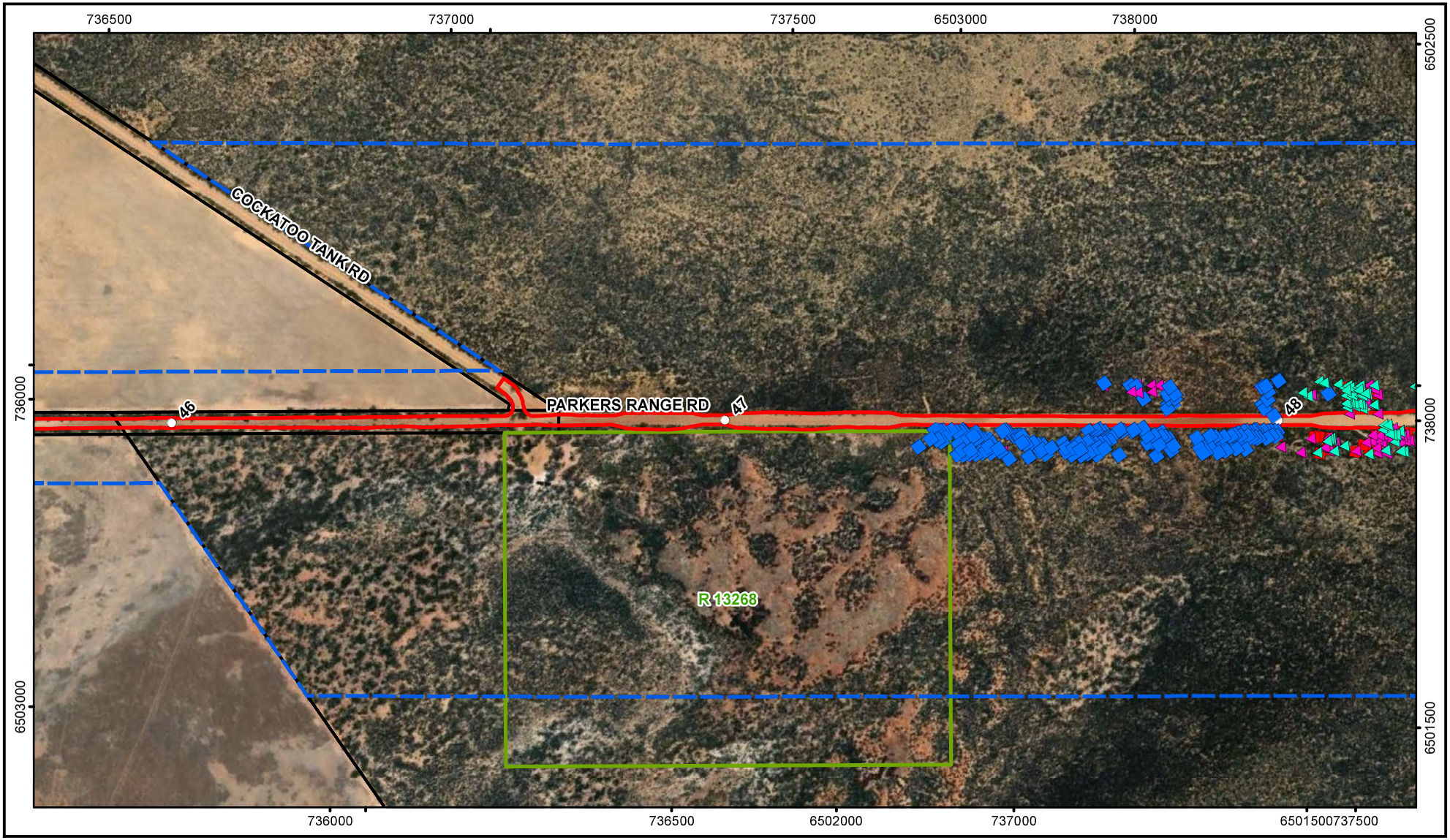
Legend
- Centreline Chainage
- *Priority Species* P3, Vst
- P4, Gne
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 46 km to 48 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

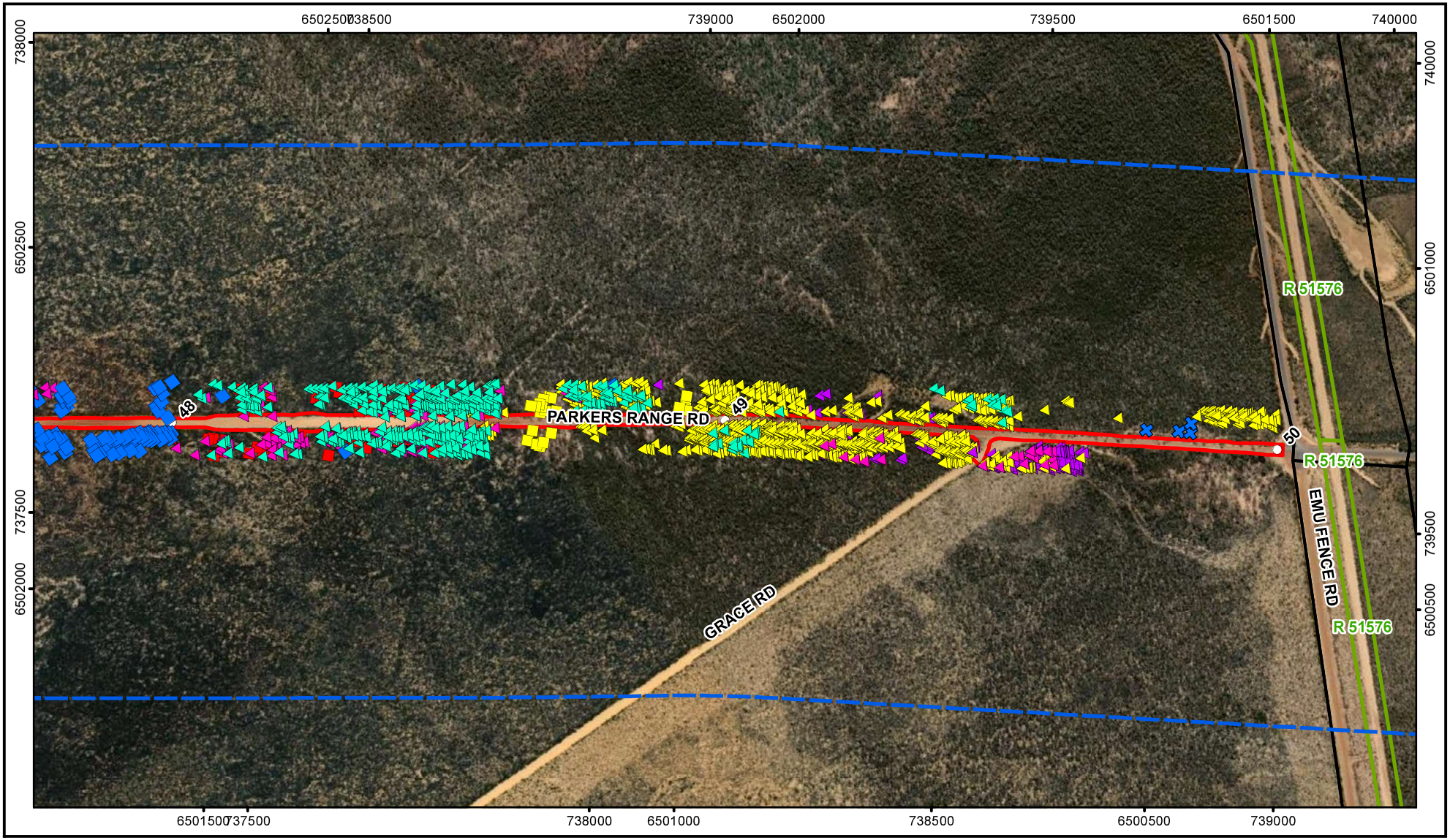
Legend
Centreline Chainage
CPS 10197/1
Survey Limit
Reserves
Cadasta Bdry
Priority Species
P2 or P3, Bgi
P2, Vms
P3, Vmi
P3, Vst

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 48 km to 50 km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023, CAD Ref: a2765_MR_MTH_38_05_01, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Reserves
- Cadasta Bdry

Priority Species

- P1, Bst
- P1, Cpr
- P1, Meg
- P2 or P3, Bgi
- P2, Aco
- P2, Vms
- P3, Rtr
- P3, Vgr
- P3, Vmi
- P3, Vst

0 0.2 km

N

Central Section CPS10265

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 50km to Chn 51km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Priority Species

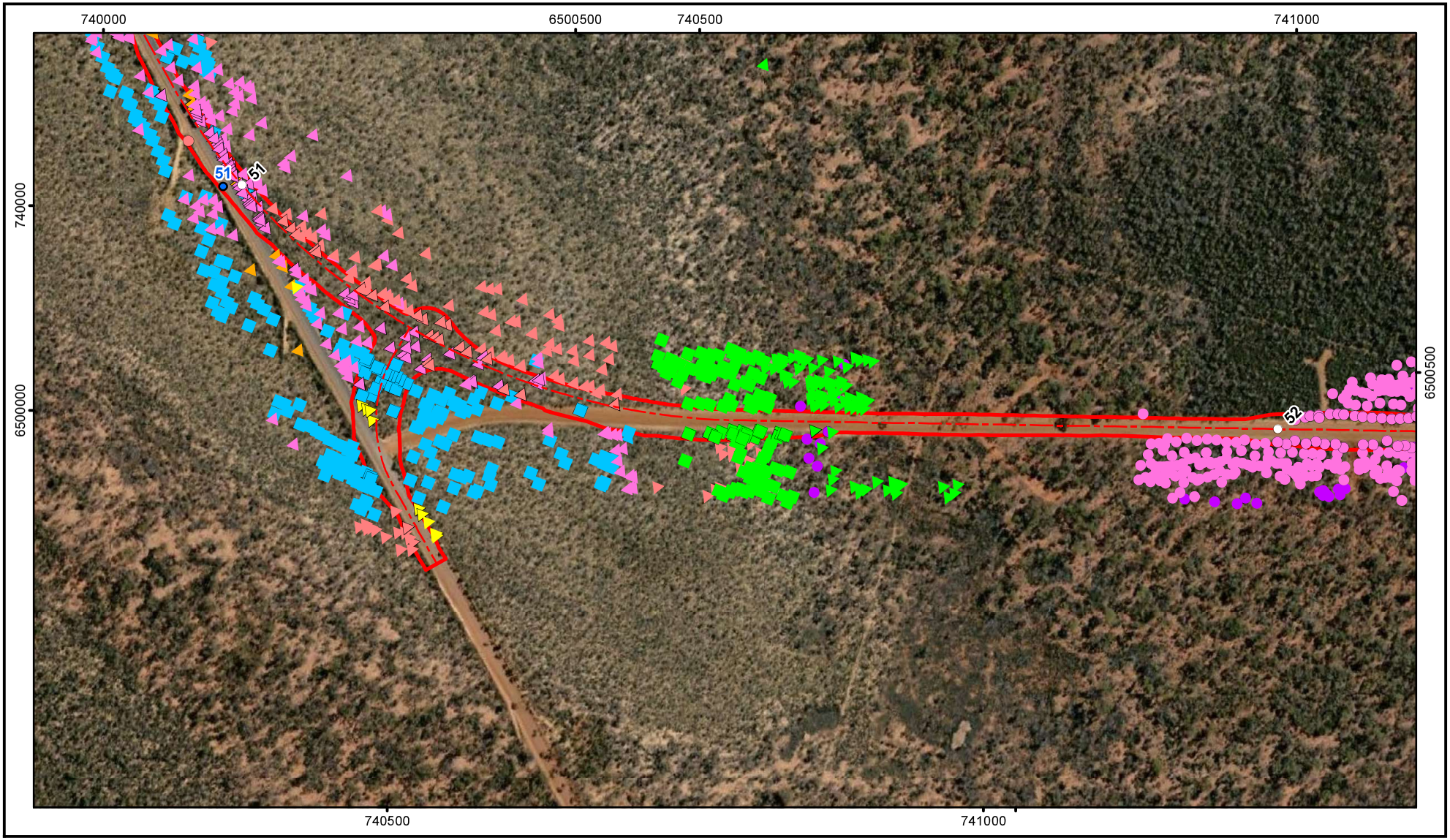
- P1, Cpr, Not Taken
- P1, Cpr, Taken
- P2 or P3, Bgi, Not Taken
- P2 or P3, Bgi, Taken
- P3, Bgg, Not Taken
- P3, Bgg, Taken
- P3, Btp, Not Taken
- P3, Btp, Taken
- P3, Prn, Not Taken
- P3, Vst, Not Taken
- P3, Vst, Taken
- P4, Bsh, Not Taken
- P4, Gyd, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 51km to Chn 52km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadasta Bdry

Priority Species

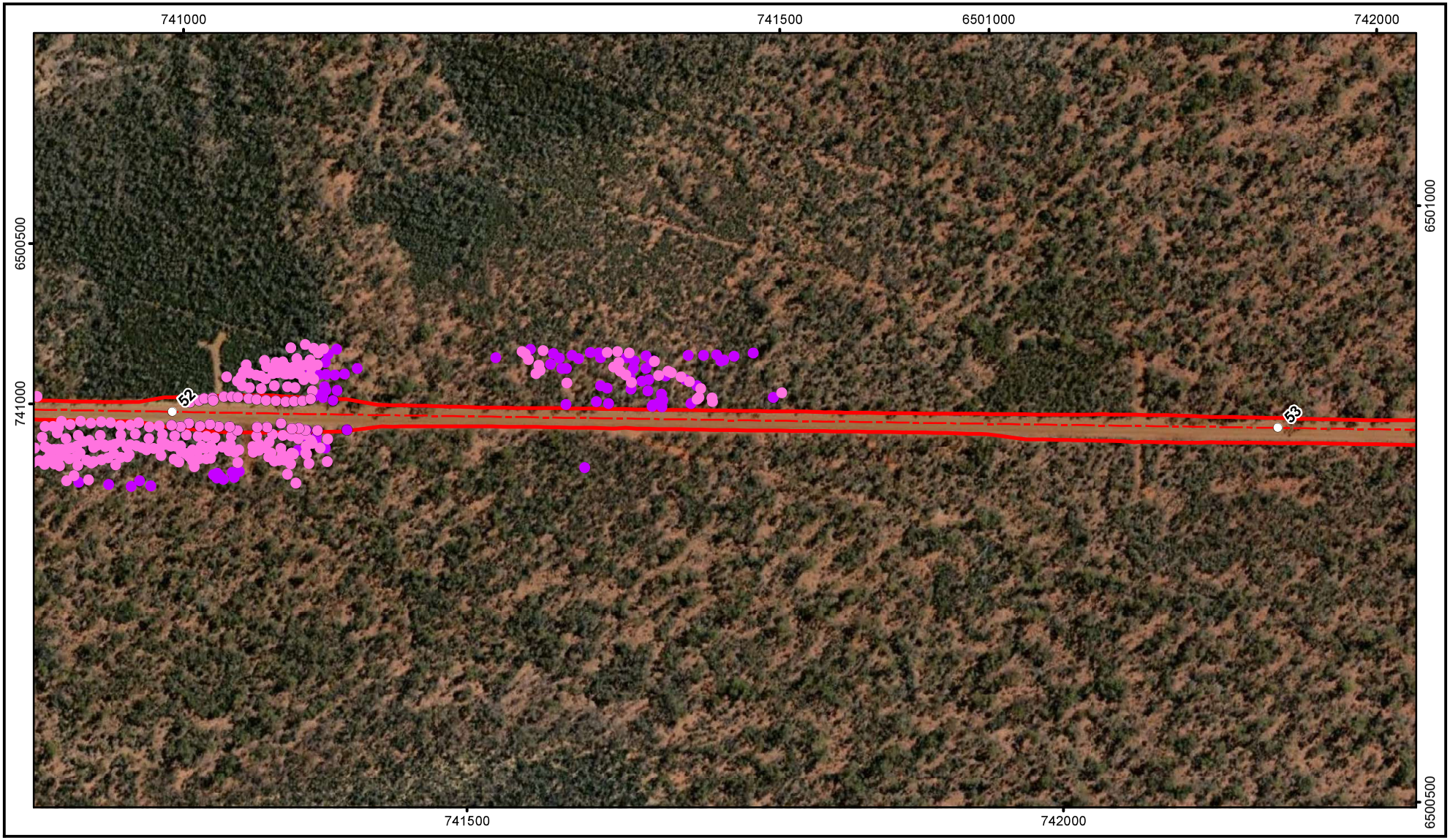
- P1, Cpr, Taken
- P1, Meg, Not Taken
- P1, Meg, Taken
- P1, Rmd, Not Taken
- P1, Rmd, Taken
- P2, Lna, Not Taken
- P2, Lna, Taken
- P2 or P3, Bgi, Not Taken
- P2 or P3, Bgi, Taken
- P3, Bgg, Not Taken
- P3, Bgg, Taken
- P3, Btp, Not Taken
- P3, Btp, Taken
- P3, Hap, Not Taken
- P3, Prn, Not Taken
- P3, Vst, Not Taken
- P3, Vst, Taken
- P4, Bsh, Not Taken
- P4, Bsh, Taken
- P4, Gyd, Not Taken
- P4, Gyd, Taken
- P4, Mif, Not Taken
- P4, Mif, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 52km to Chn 53km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadasta Bdry

Priority Species

- P1, Meg, Not Taken
- P1, Meg, Taken
- P1, Rmd, Not Taken
- P1, Rmd, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 53km to Chn 54km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 54km to Chn 55km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

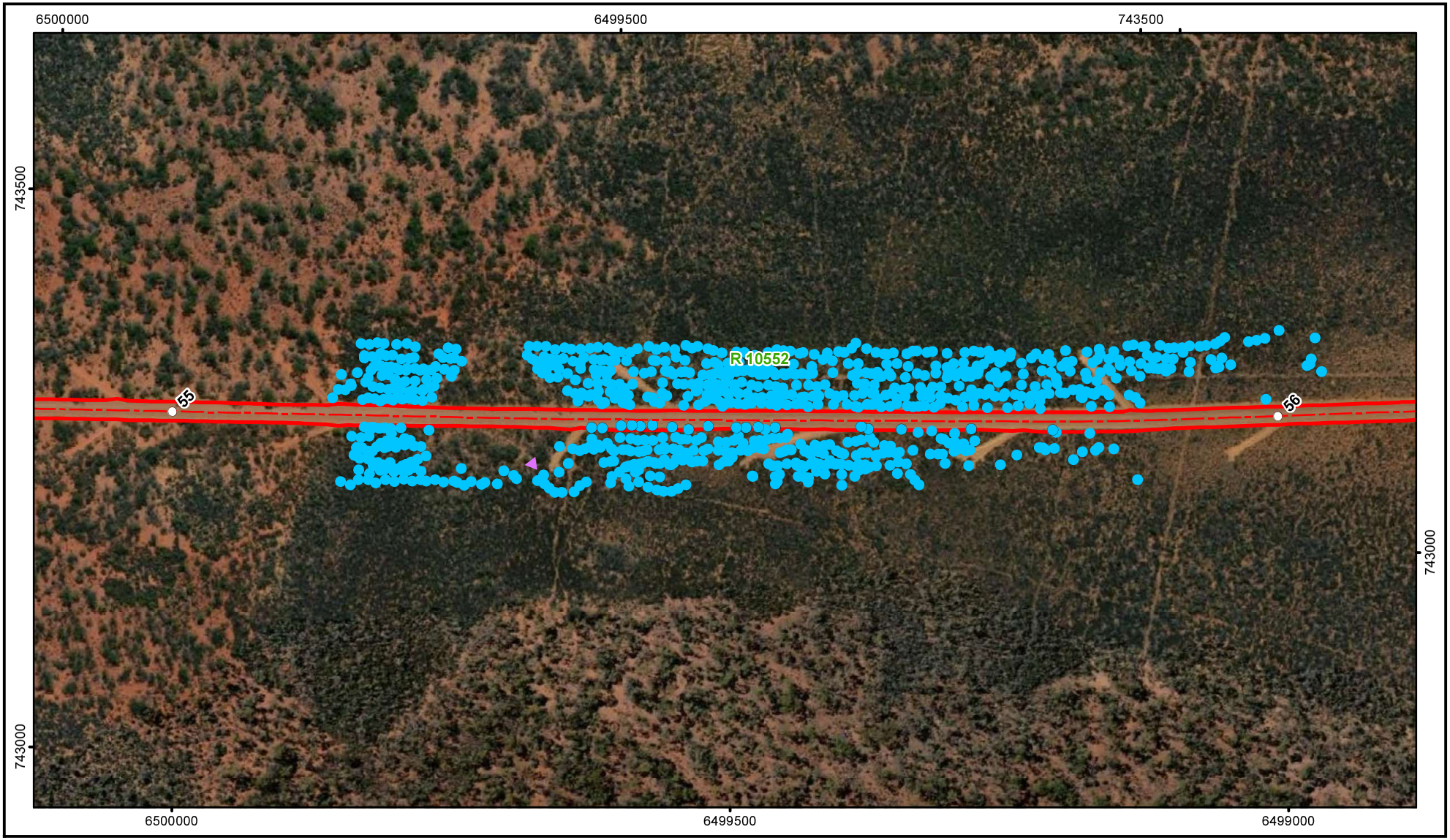
Priority Species
- P1, Cye, Not Taken
- P1, Cye, Taken
- P1, Mec, Not Taken
- P1, Mec, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 55km to Chn 56km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

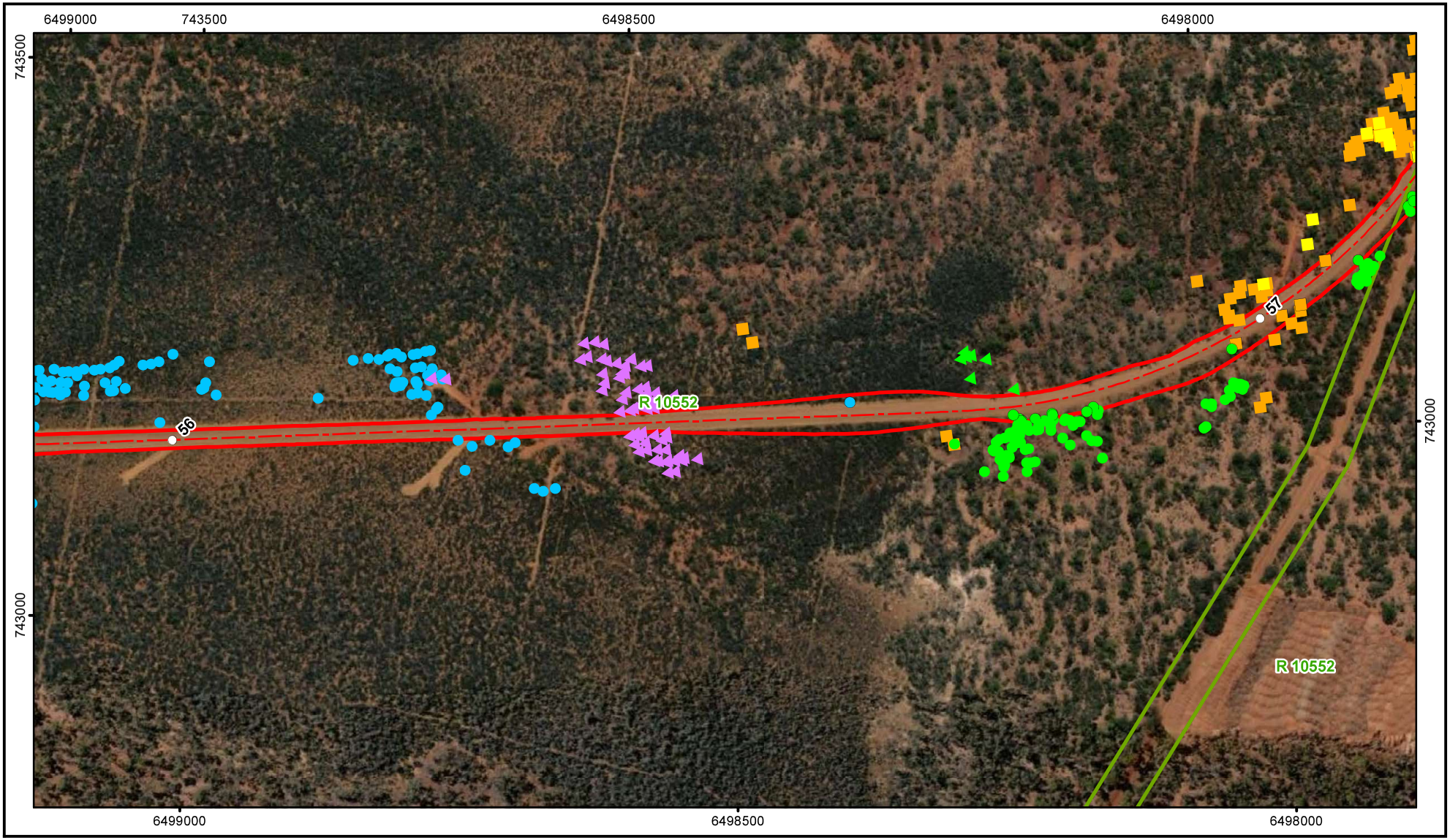
Priority Species
- P1, Mec, Not Taken
- P1, Mec, Taken
- P3, Rtr, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 56km to Chn 57km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Priority Species

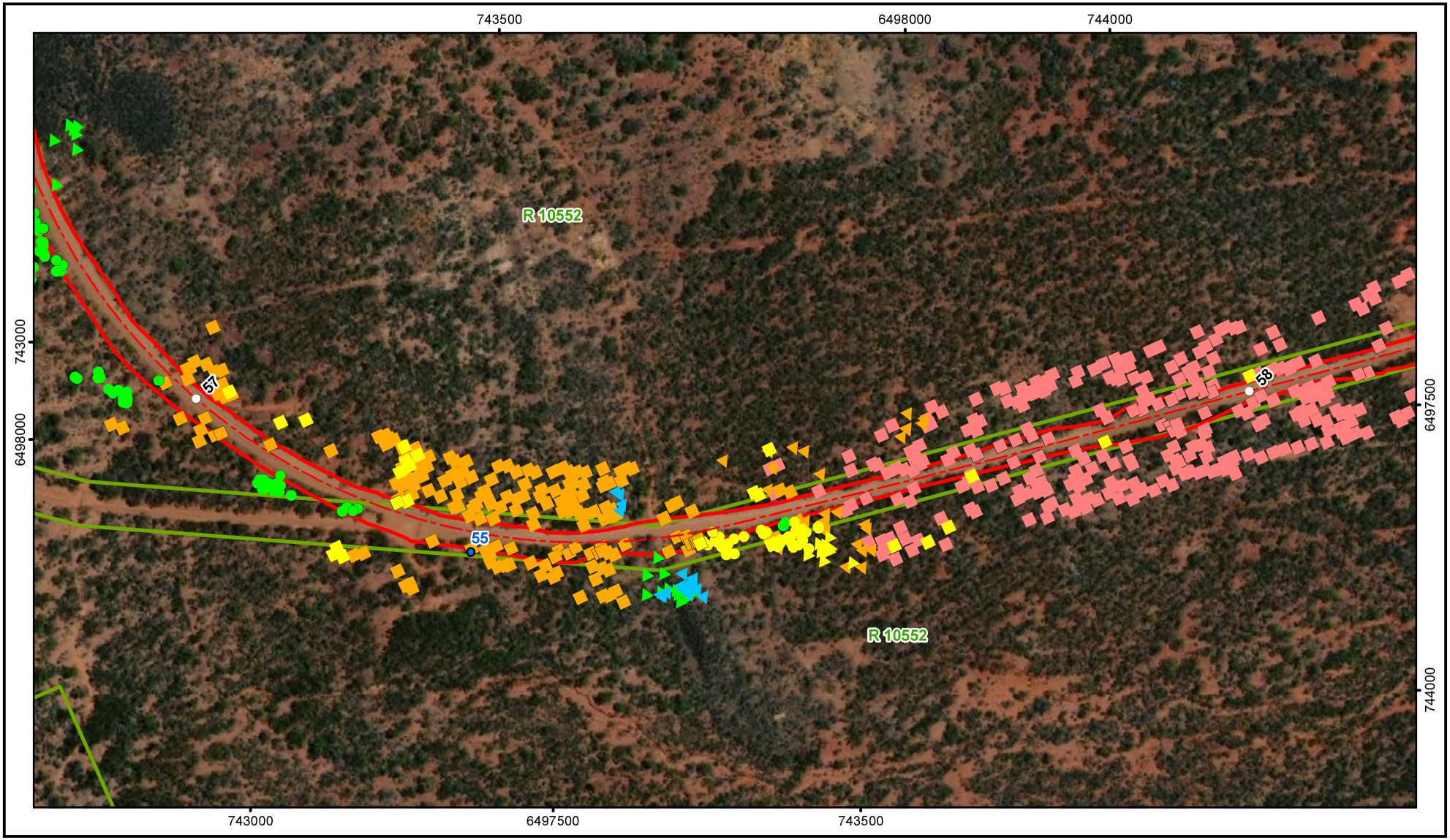
- P1, Euc, Not Taken
- P1, Euc, Taken
- P1, Mec, Not Taken
- P1, Mec, Taken
- P2, Aco, Not Taken
- P2, Aco, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken
- P3, Hap, Not Taken
- P3, Rtr, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 57km to Chn 58km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Priority Species

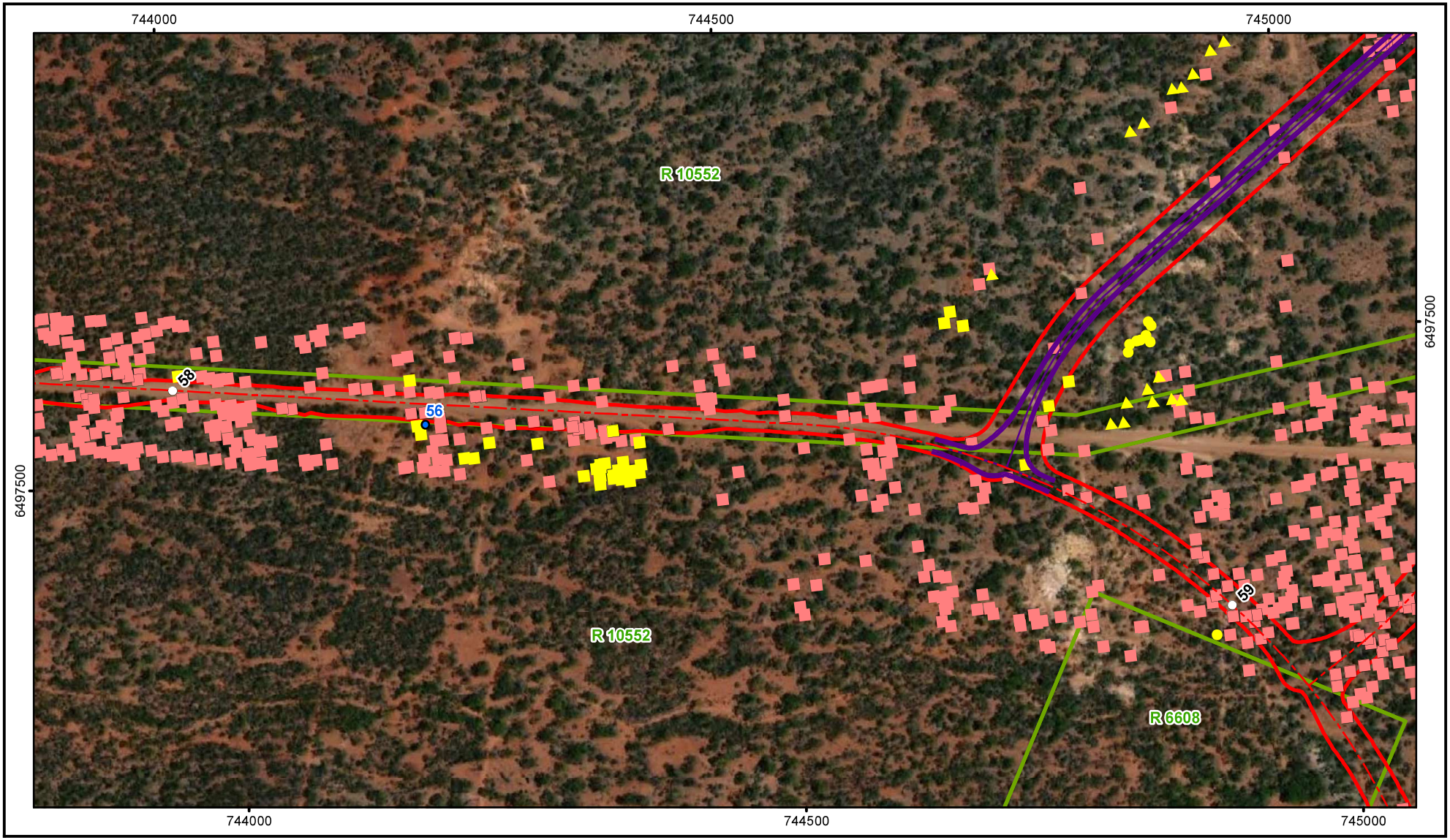
- P1, Edr, Not Taken
- P1, Edr, Taken
- P1, Euc, Not Taken
- P1, Euc, Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Aco, Not Taken
- P2, Aco, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken
- P3, Epo, Not Taken
- P3, Hap, Not Taken
- P4, Ecm, Not Taken
- P4, Sbr, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 58km to Chn 59km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- MLF_Link_Rd_20230614
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Priority Species

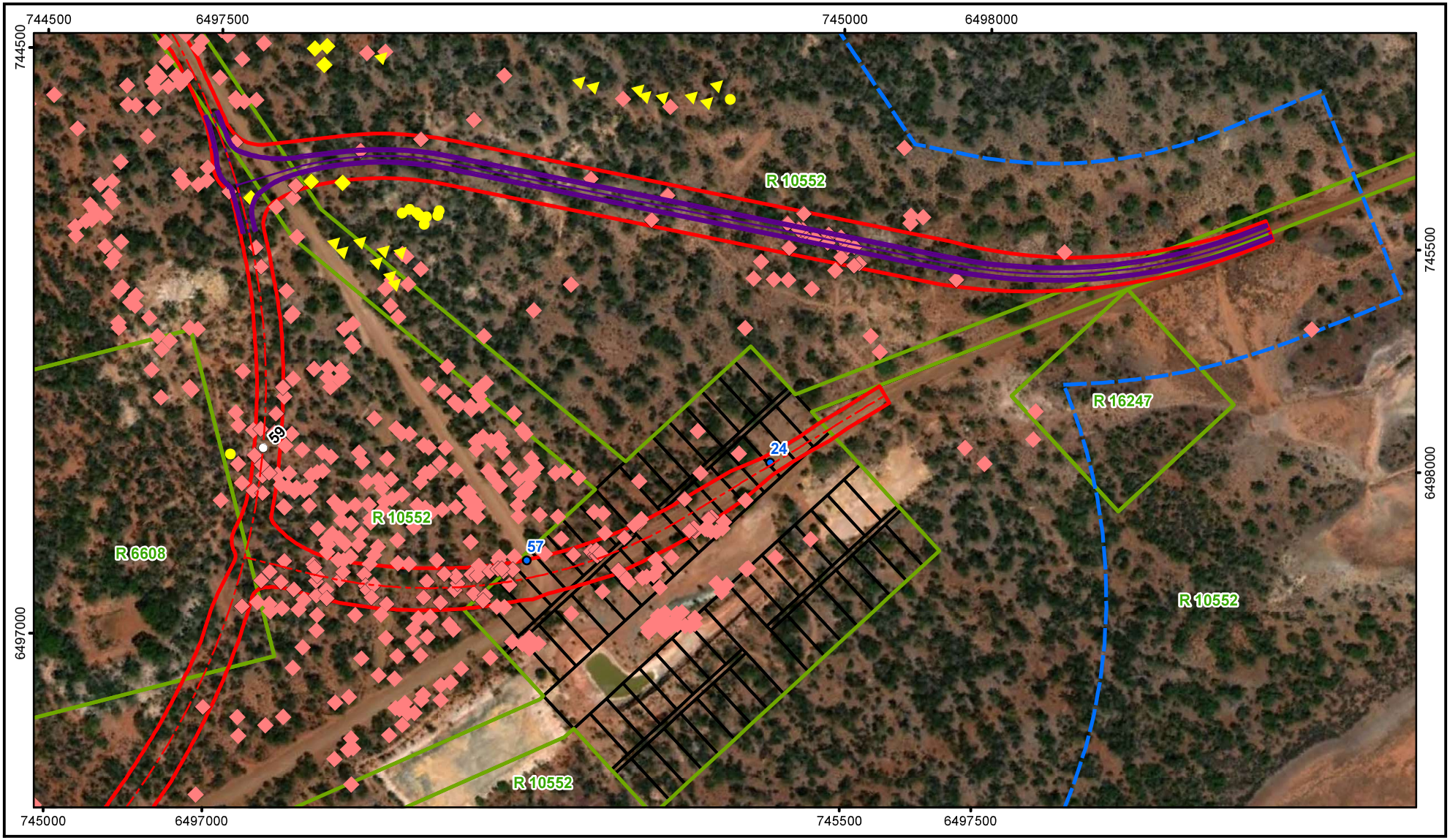
- P1, Edr, Not Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken
- P3, Epo, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Marvel Loch - Forrestonia Road Connection - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- MLF_Link_Rd_20230614
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves

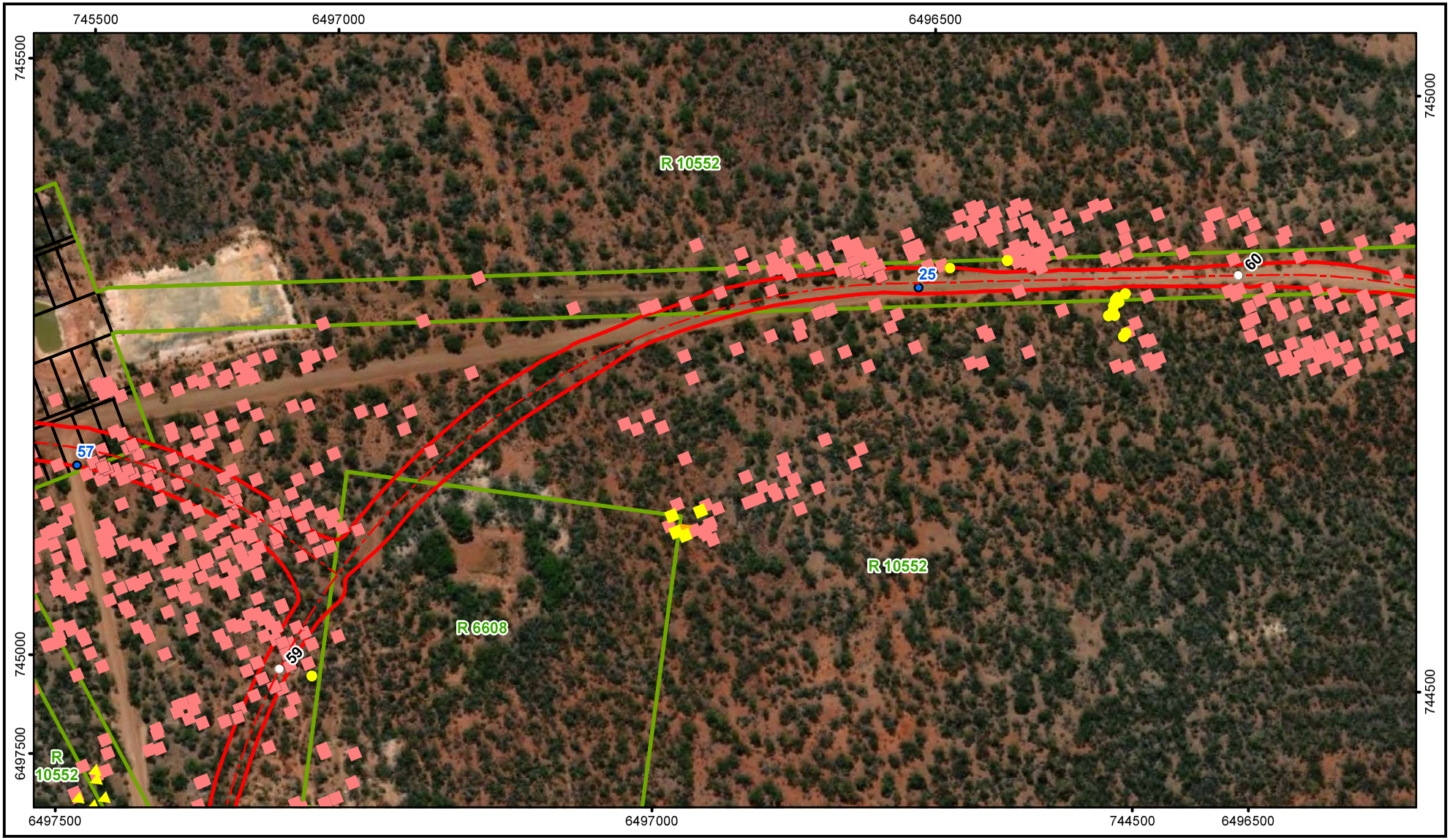
Priority Species

- P1, Edr, Not Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken
- P3, Epo, Not Taken

0 100 m

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 59km to Chn 60km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Priority Species

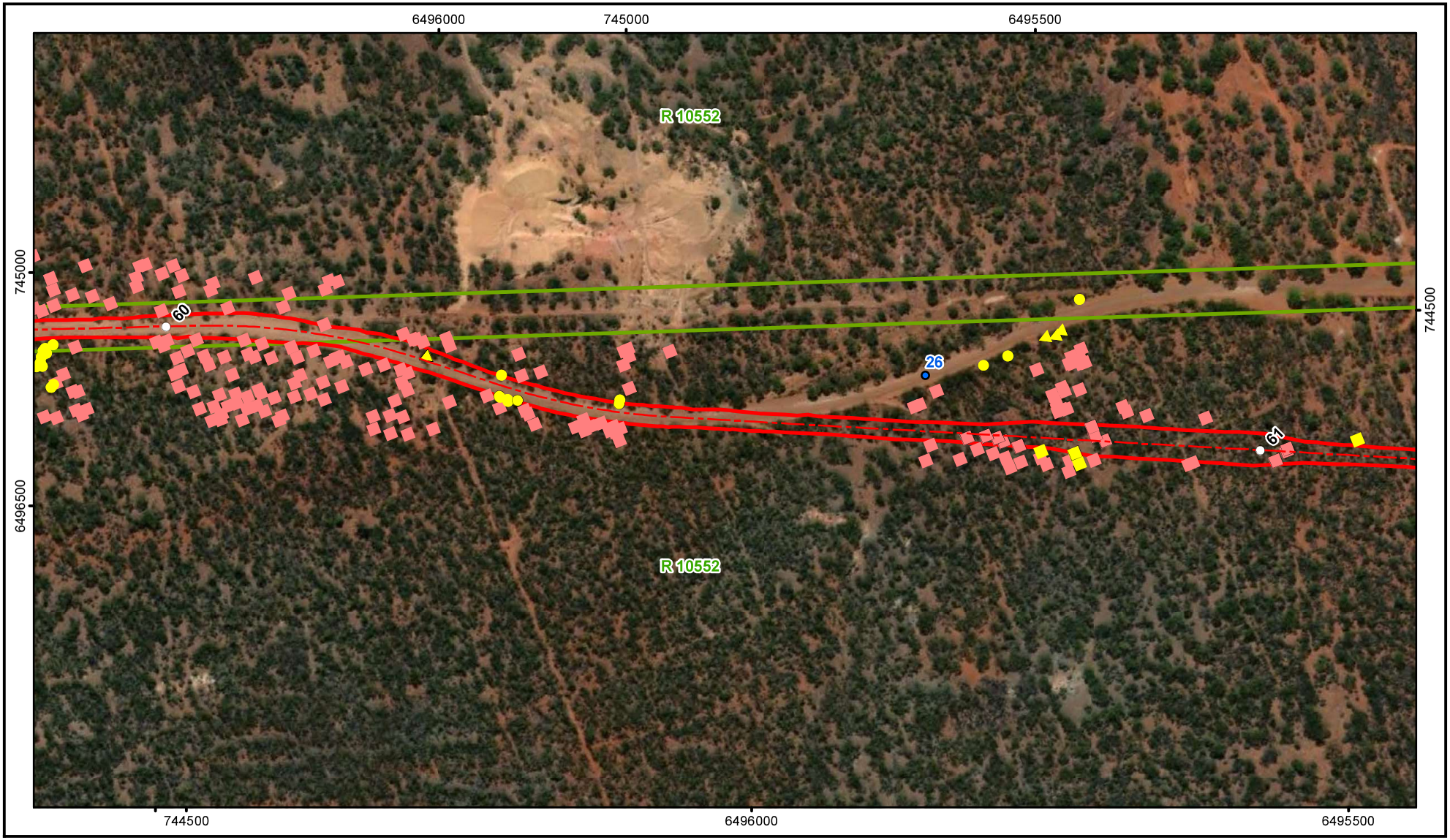
- P1, Edr, Taken
- P1, Edr, Not Taken
- P2, Aas, Taken
- P2, Aas, Not Taken
- P2, Eul, Not Taken
- P3, Epo, Not Taken
- P4, Ecm, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 60km to Chn 61km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Priority Species

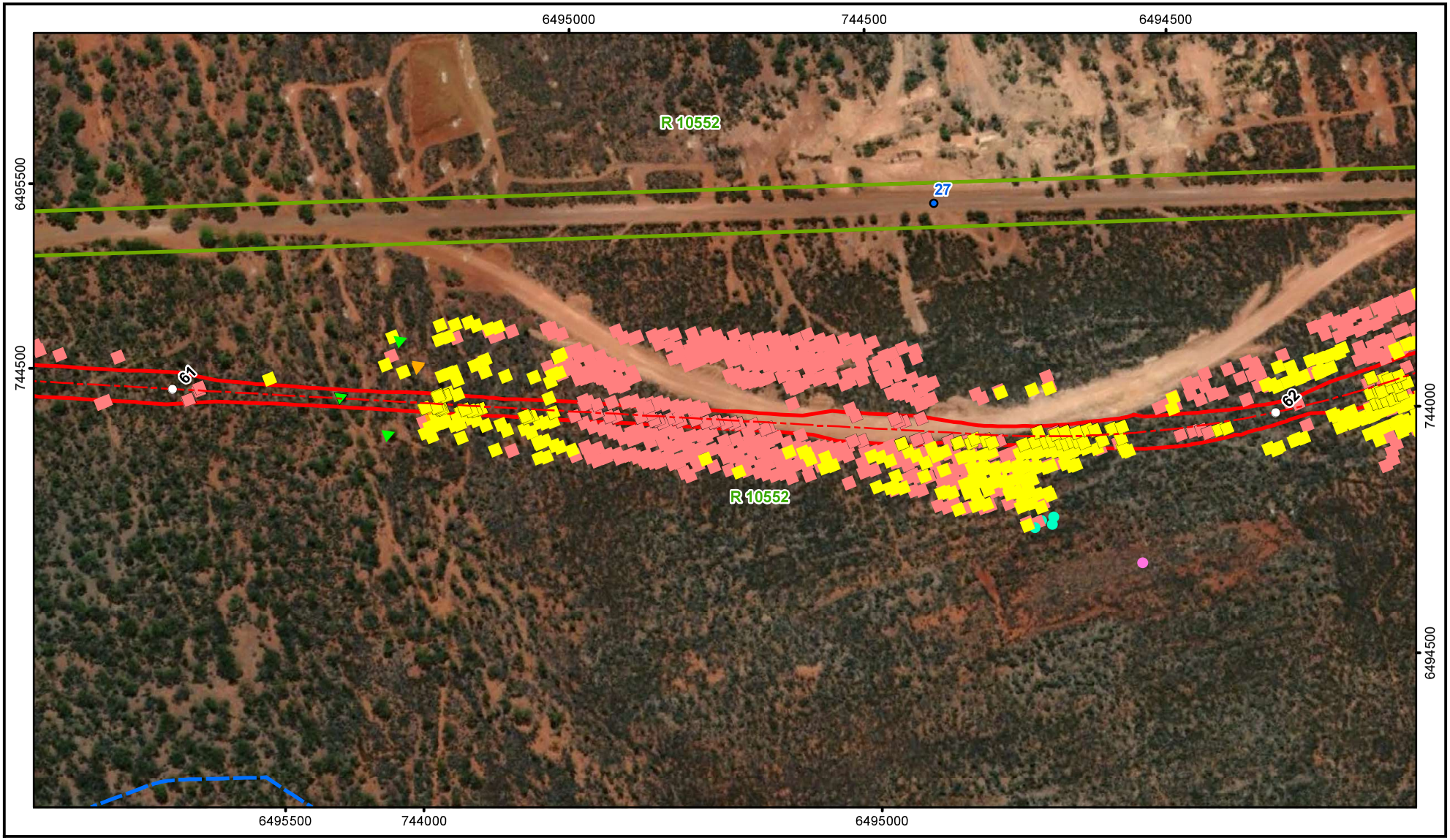
- P1, Edr, Not Taken
- P1, Edr, Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken
- P3, Epo, Not Taken
- P3, Epo, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 61km to Chn 62km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Priority Species

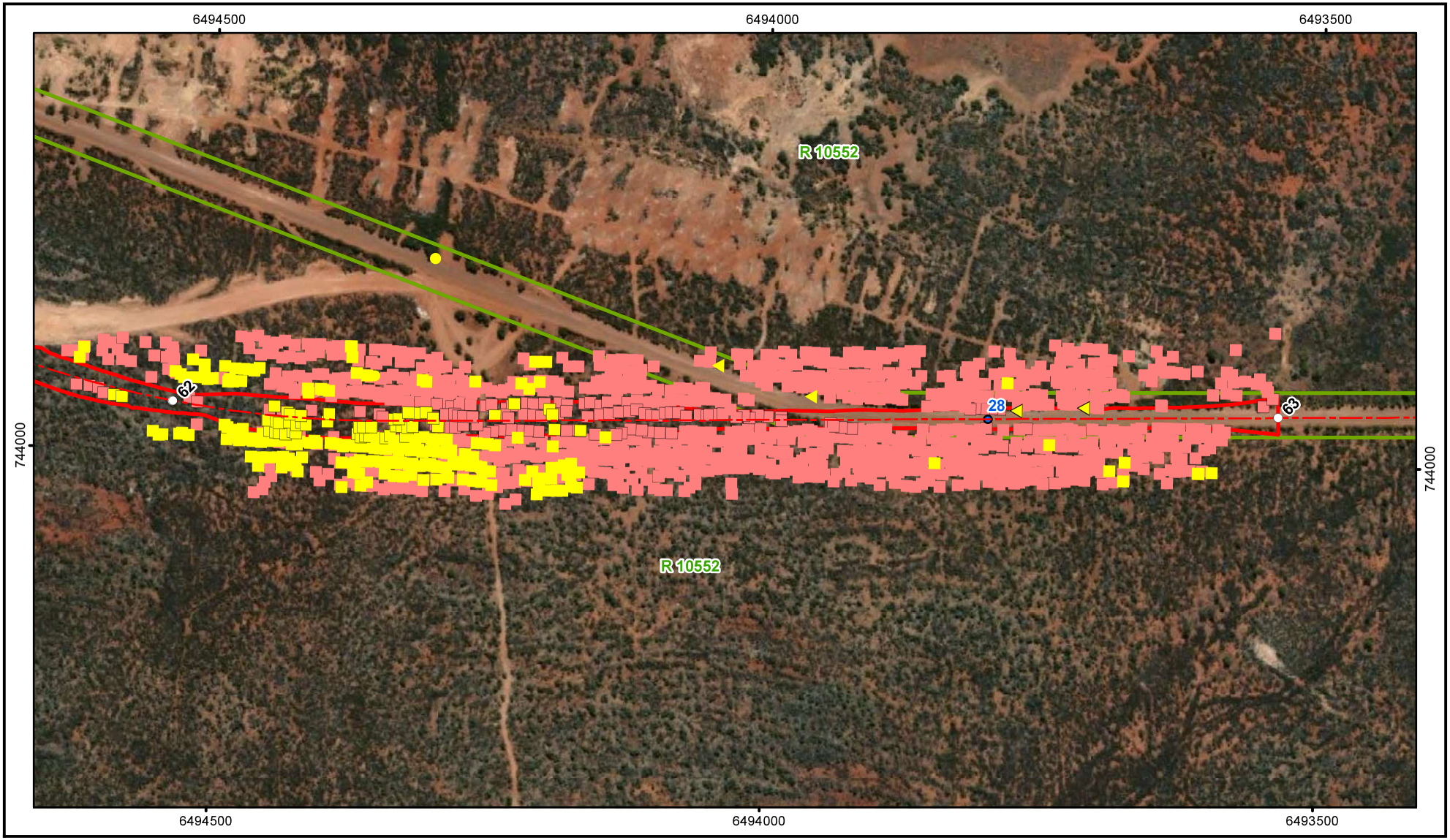
- P1, Hen, Not Taken
- P1, Rmd, Not Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken
- P4, Ecm, Not Taken
- P4, Ecm, Taken
- P4, Mif, Not Taken
- P4, Mif, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 62km to Chn 63km - Flora - Priority Species

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_01, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Priority Species

- P1, Edr, Not Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken
- P3, Epo, Not Taken
- P3, Epo, Taken

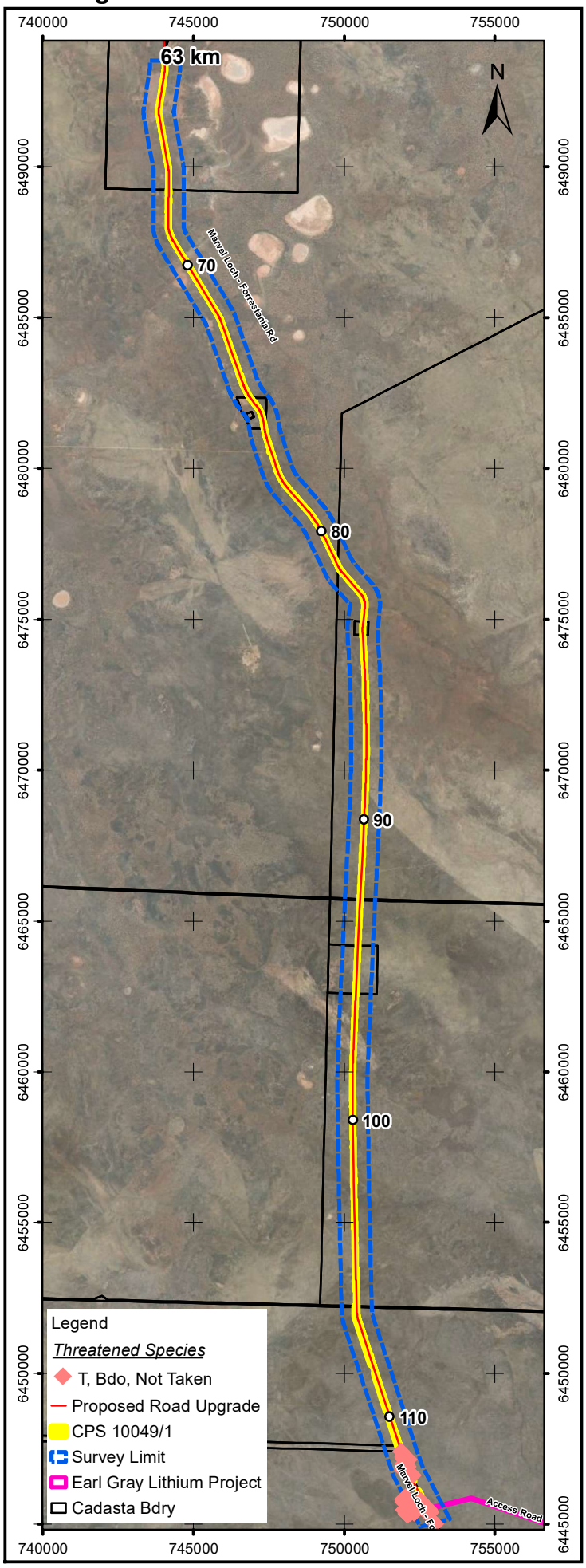
0 100 m

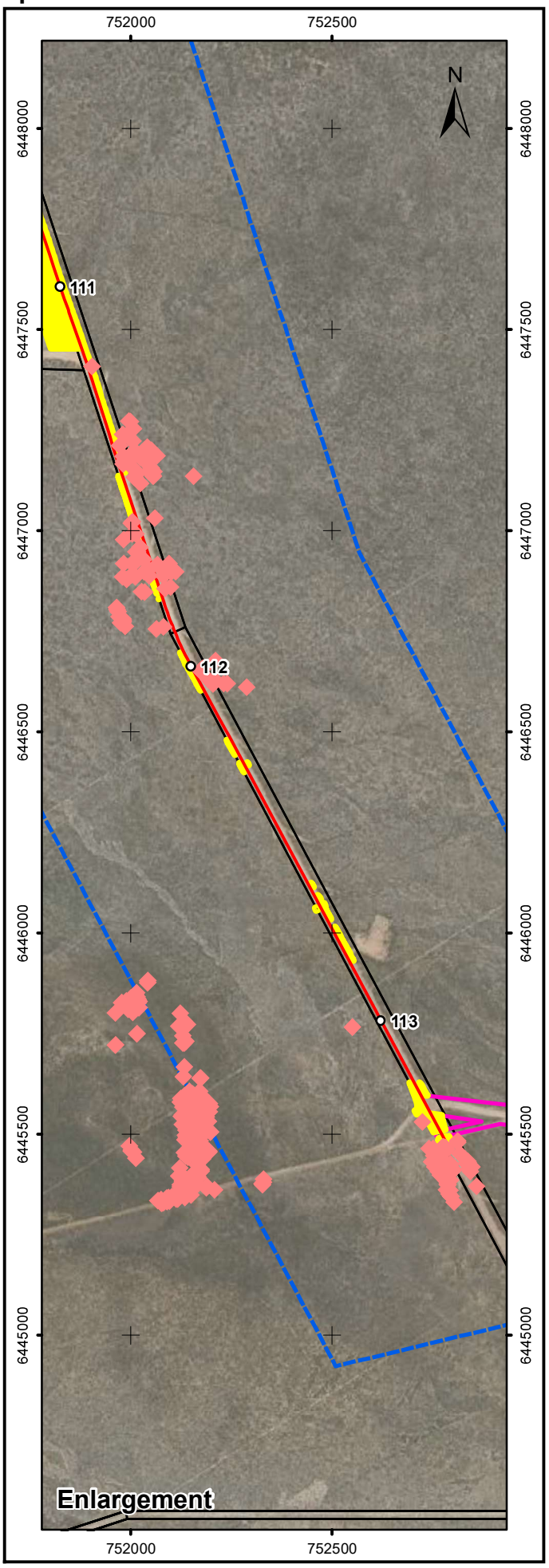
N

Southern Section CPS10049

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit CPS 10049/1 - Flora - Theatened Species

DRAFT





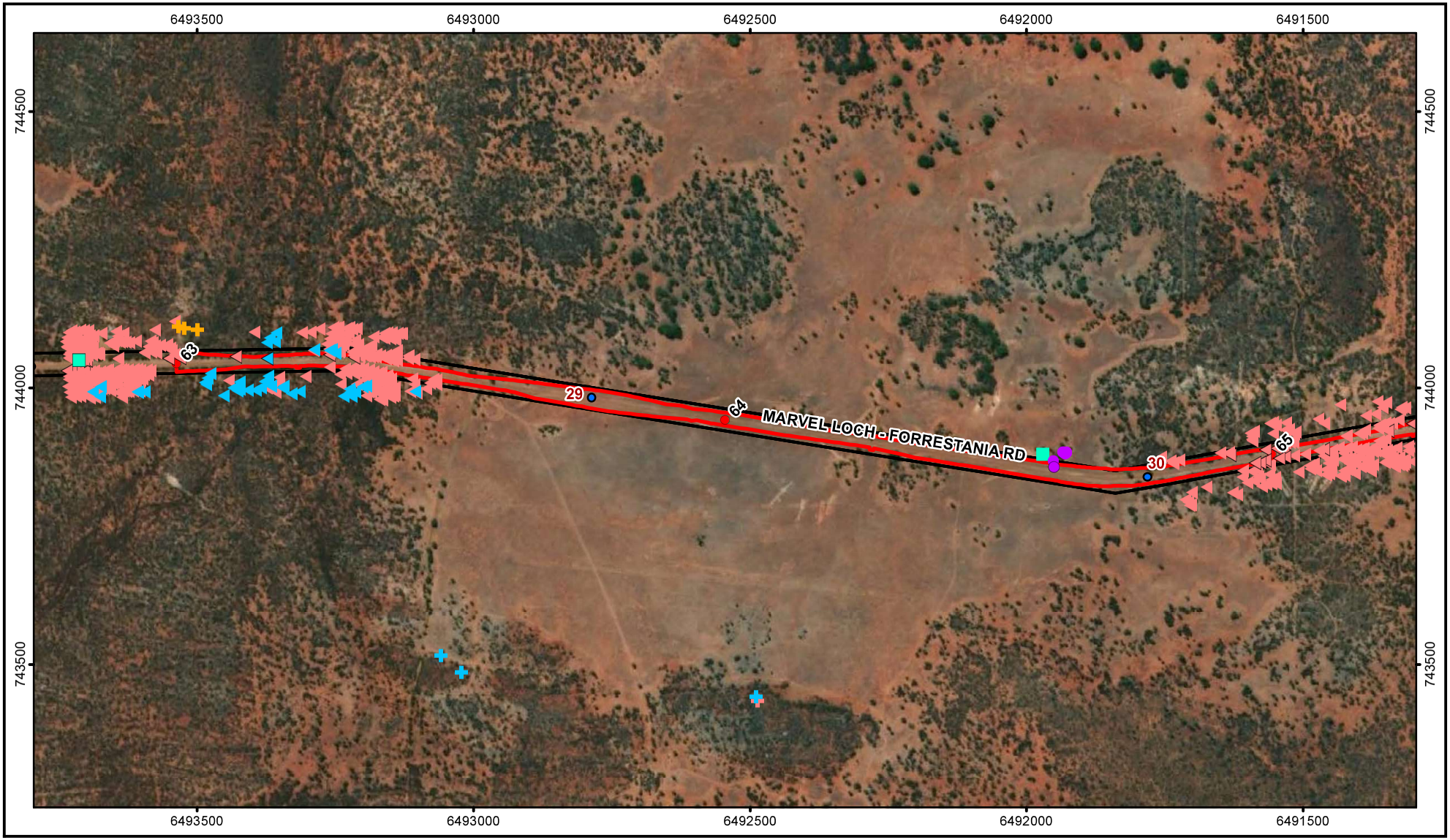
Drawn: CAD Resources (08 9246 3242), Date: Oct 2023, CAD Ref: a2765_MR_MTH_38_03_01, Rev: C
Scale 1:200,000 (left panel), 1:15,000 (right panel), A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 63 km to 65 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

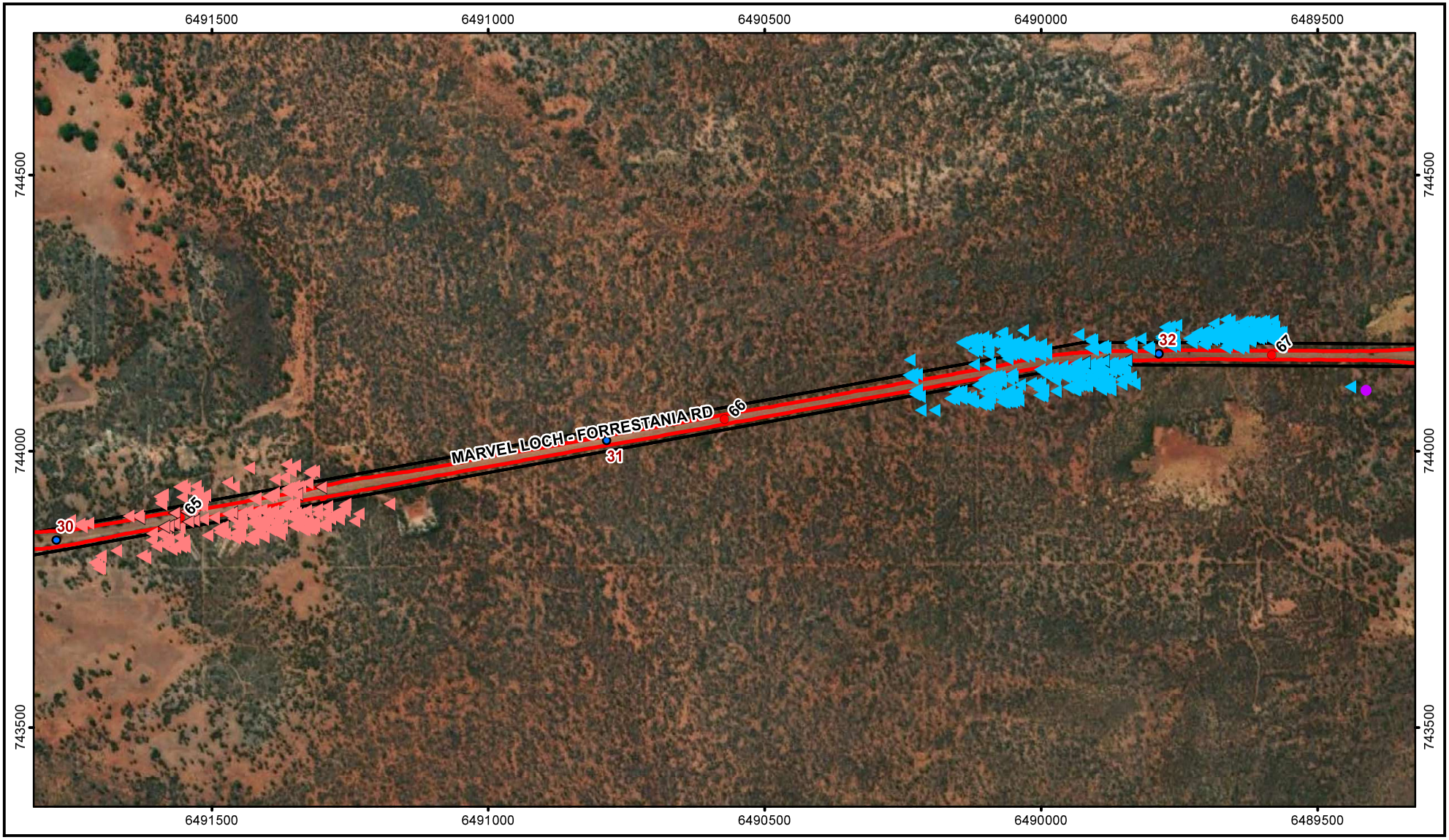
- P1, Edr, Not Taken
- P1, Edr, Taken
- P1, Hen, Not Taken
- P1, Meg, Not Taken
- P1, Rmd, Not Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken
- P3, Epo, Not Taken
- P3, Epo, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 65 km to 67 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

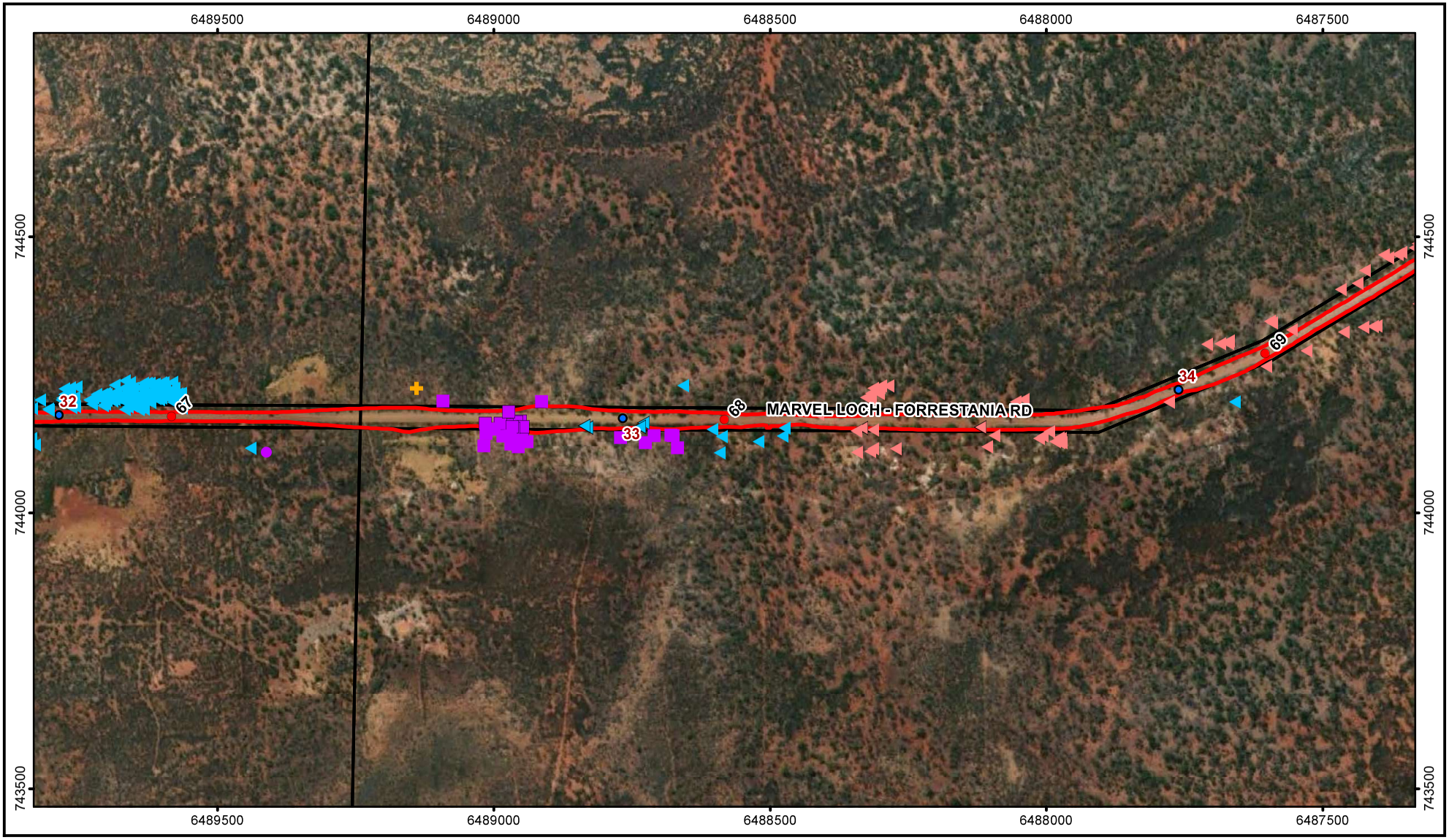
Priority Species
- P1, Edr, Not Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 67 km to 69 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

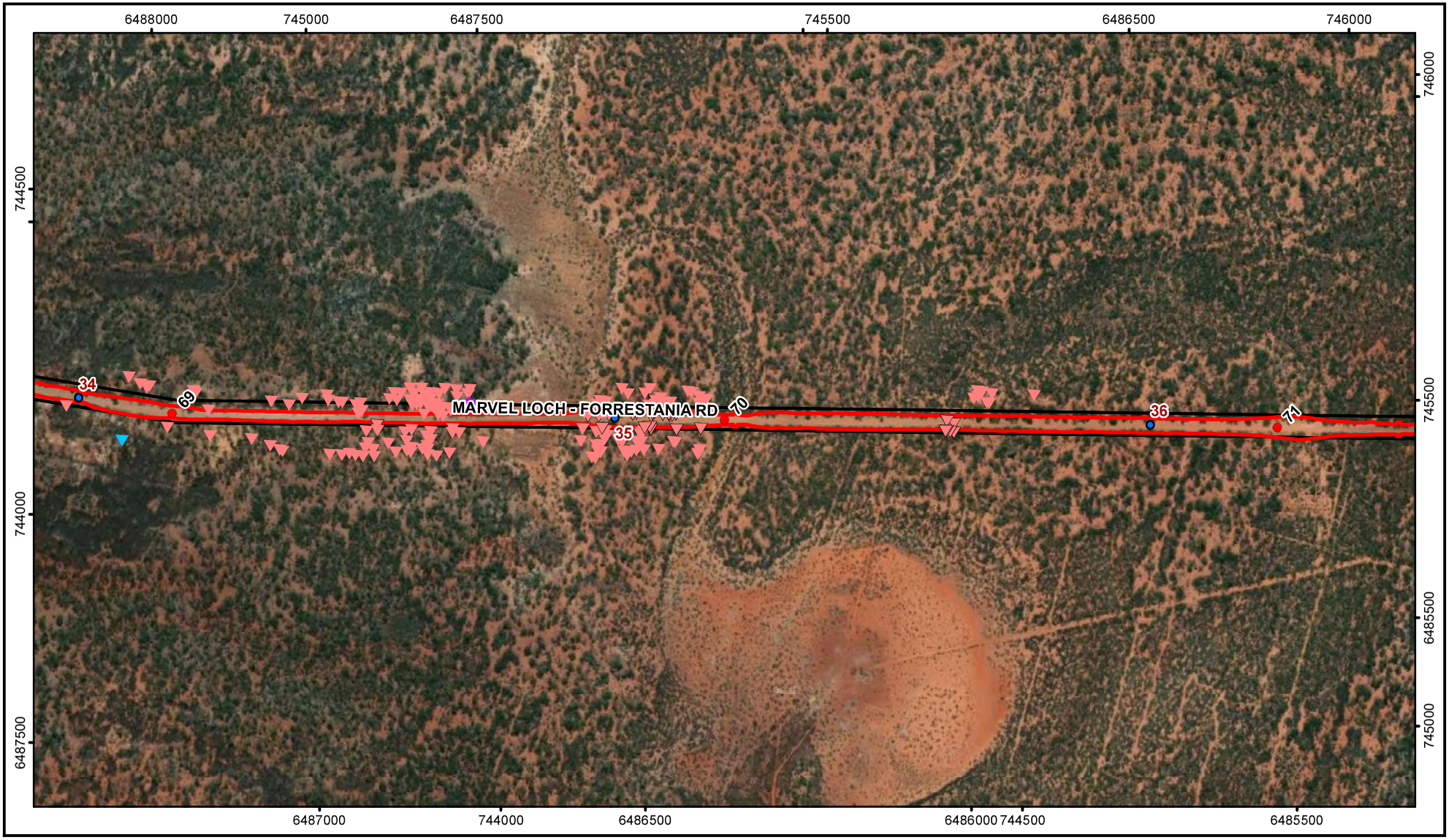
Priority Species

- P1, Edr, Not Taken
- P1, Meg, Not Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P2, Eul, Taken
- P3, Hap, Not Taken
- P3, Hap, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 69 km to 71 km - Flora - Priority Species

DRAFT

0 0.2 km



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

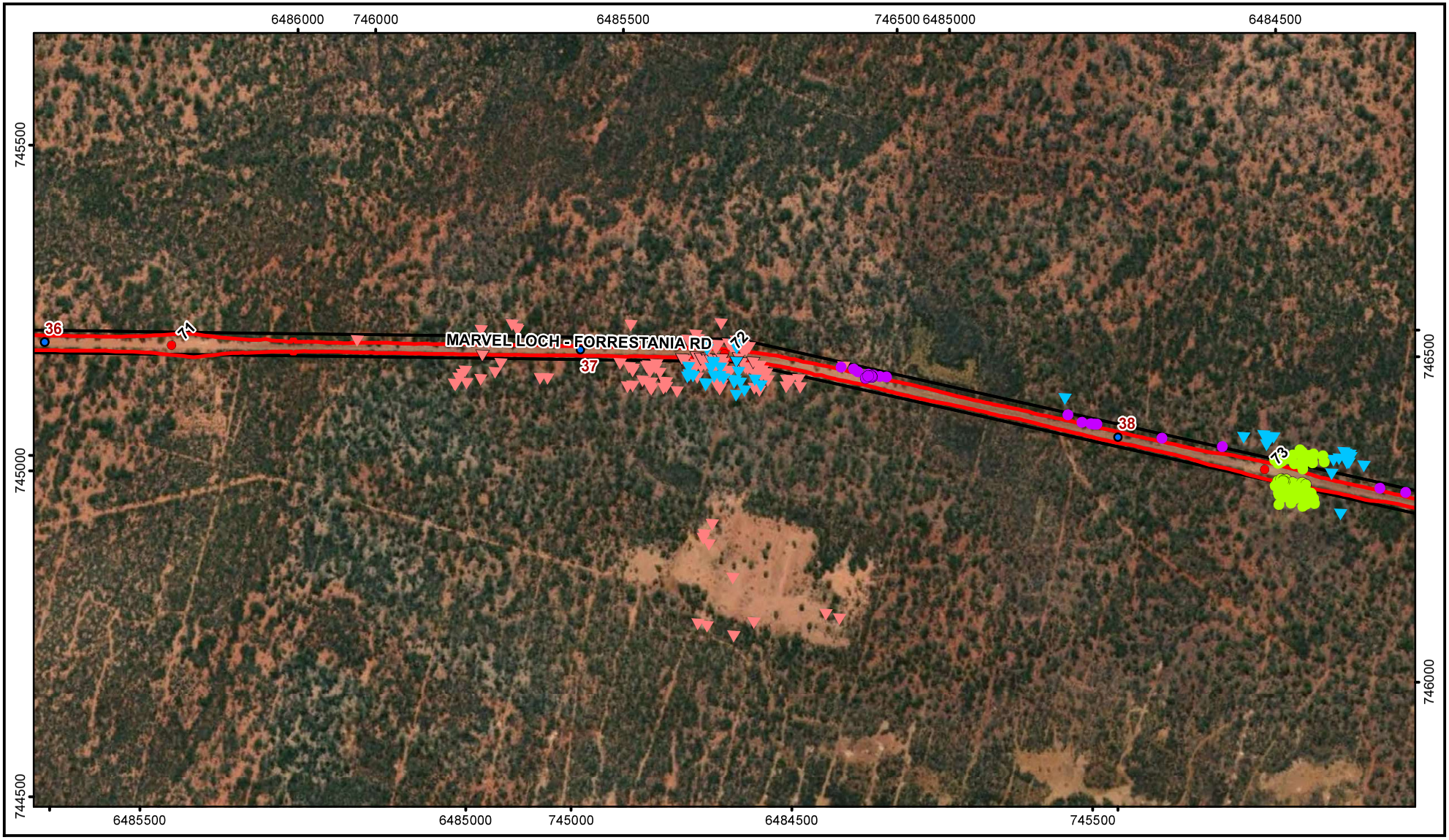
Legend
- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P3, Hap, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 71 km to 73 km - Flora - Priority Species

DRAFT

0 0.2 km



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

- P1, Edr, Taken
- P1, Edr, Not Taken
- P1, Gli, Taken
- P1, Gli, Not Taken
- P2, Aas, Taken
- P2, Aas, Not Taken
- P2, Eul, Taken
- P2, Eul, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 73 km to 75 km - Flora - Priority Species

DRAFT

0 0.2 km



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

- P1, Edr, Not Taken
- P1, Edr, Taken
- P1, Gli, Not Taken
- P1, Gli, Taken
- P2, Eul, Not Taken
- P3, Hap, Not Taken
- P3, Rto, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 75 km to 77 km - Flora - Priority Species

DRAFT

0 0.2 km



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

- P1, Edr, Taken
- P1, Edr, Not Taken
- P1, Gli, Taken
- P1, Gli, Not Taken
- P2, Aas, Taken
- P2, Aas, Not Taken
- P2, Eul, Taken
- P2, Eul, Not Taken
- P3, Rto, Not Taken
- P3, Hap, Not Taken
- P3, Tdi, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 77 km to 79 km - Flora - Priority Species

DRAFT

0 0.2 km



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

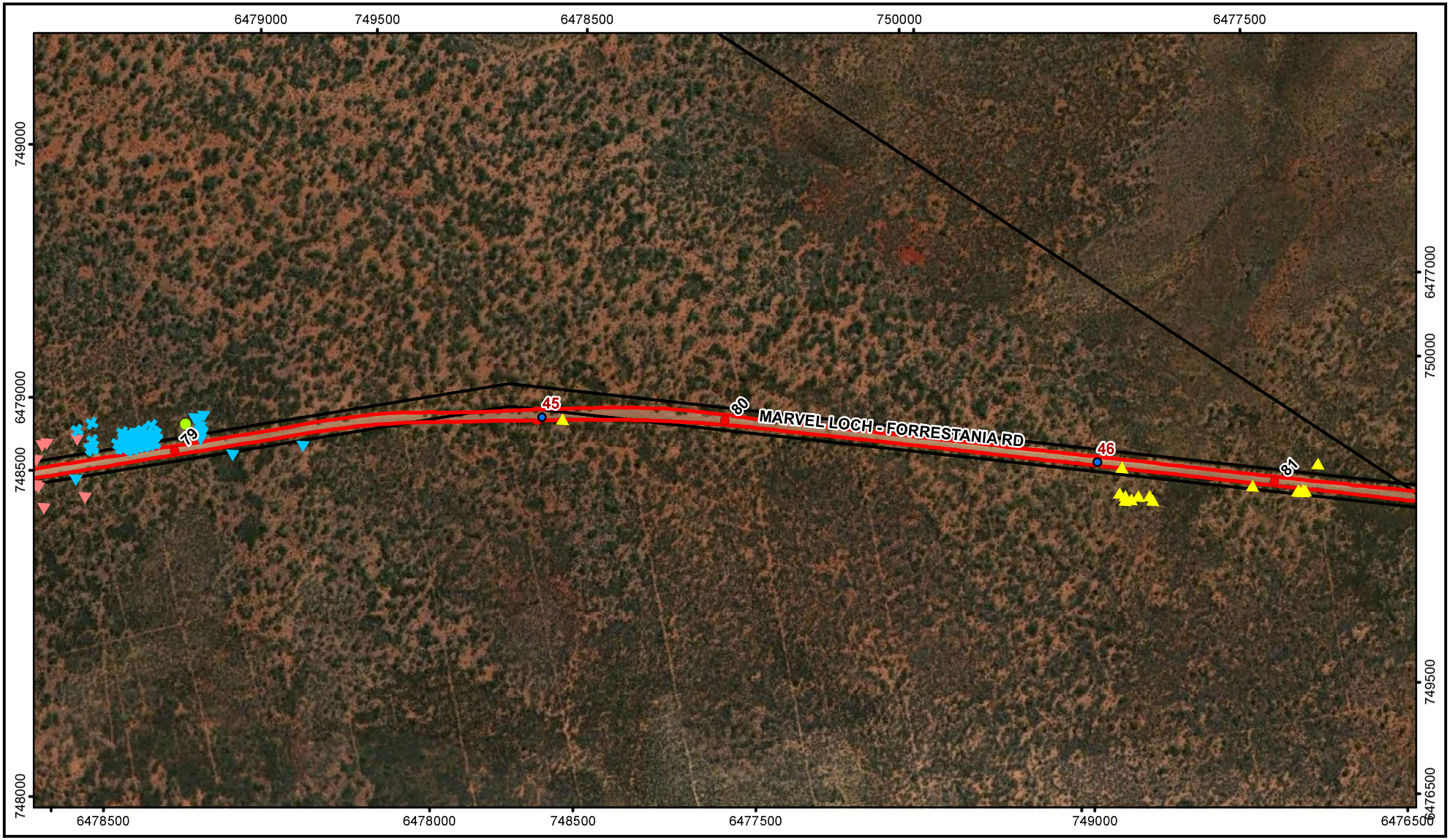
Priority Species

- P1, Edr, Not Taken
- P1, Gli, Not Taken
- P1, Rmd, Not Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P2, Eul, Not Taken
- P2, Lme, Not Taken
- P3, Btp, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 79 km to 81 km - Flora - Priority Species

DRAFT

0 0.2 km



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

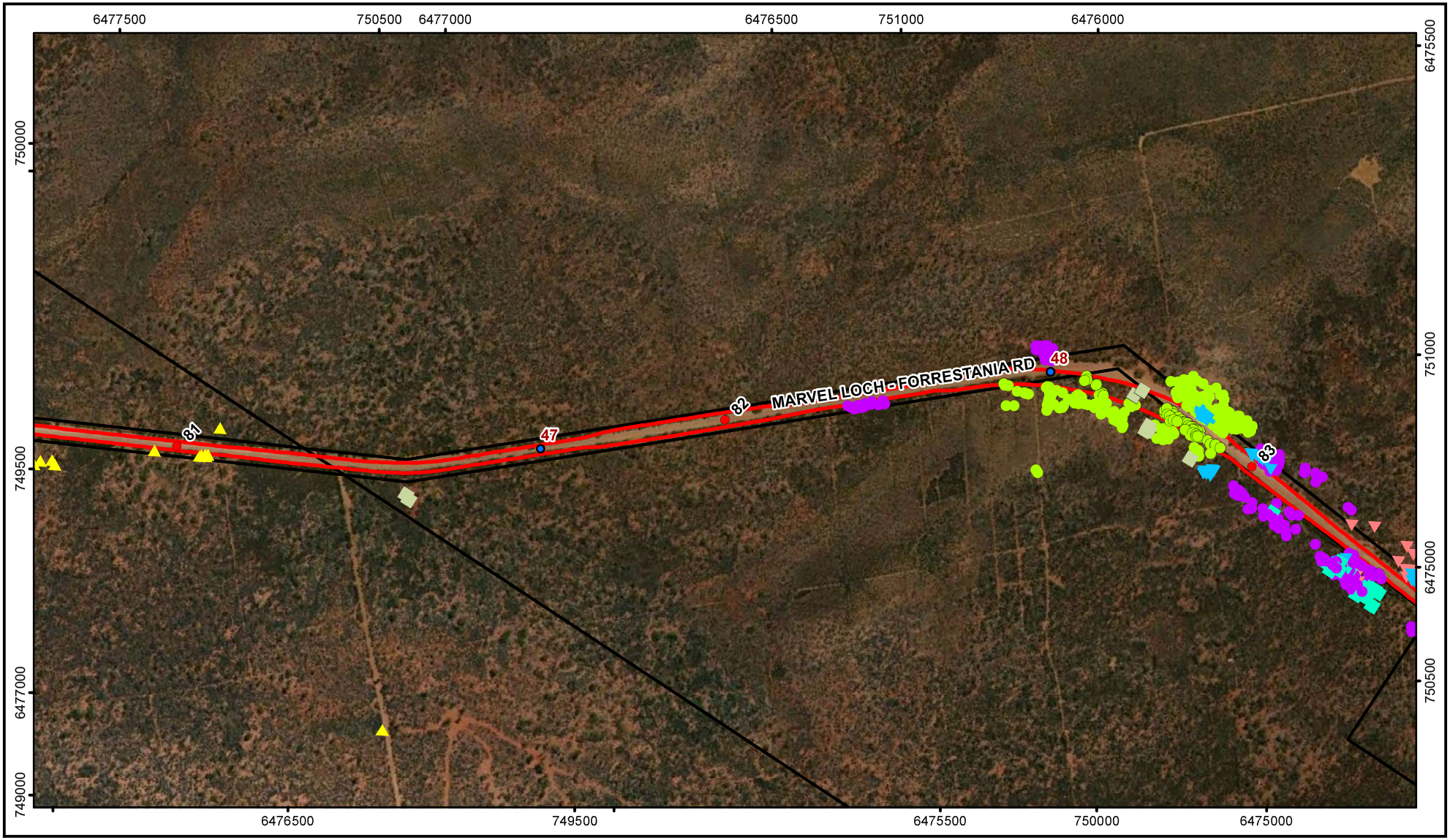
Legend
- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species
- P1, Gli, Not Taken
- P1, Rmd, Not Taken
- P2, Aas, Not Taken
- P2, Eul, Not Taken
- P4, Mif, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 81 km to 83 km - Flora - Priority Species

DRAFT

0 0.2 km



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

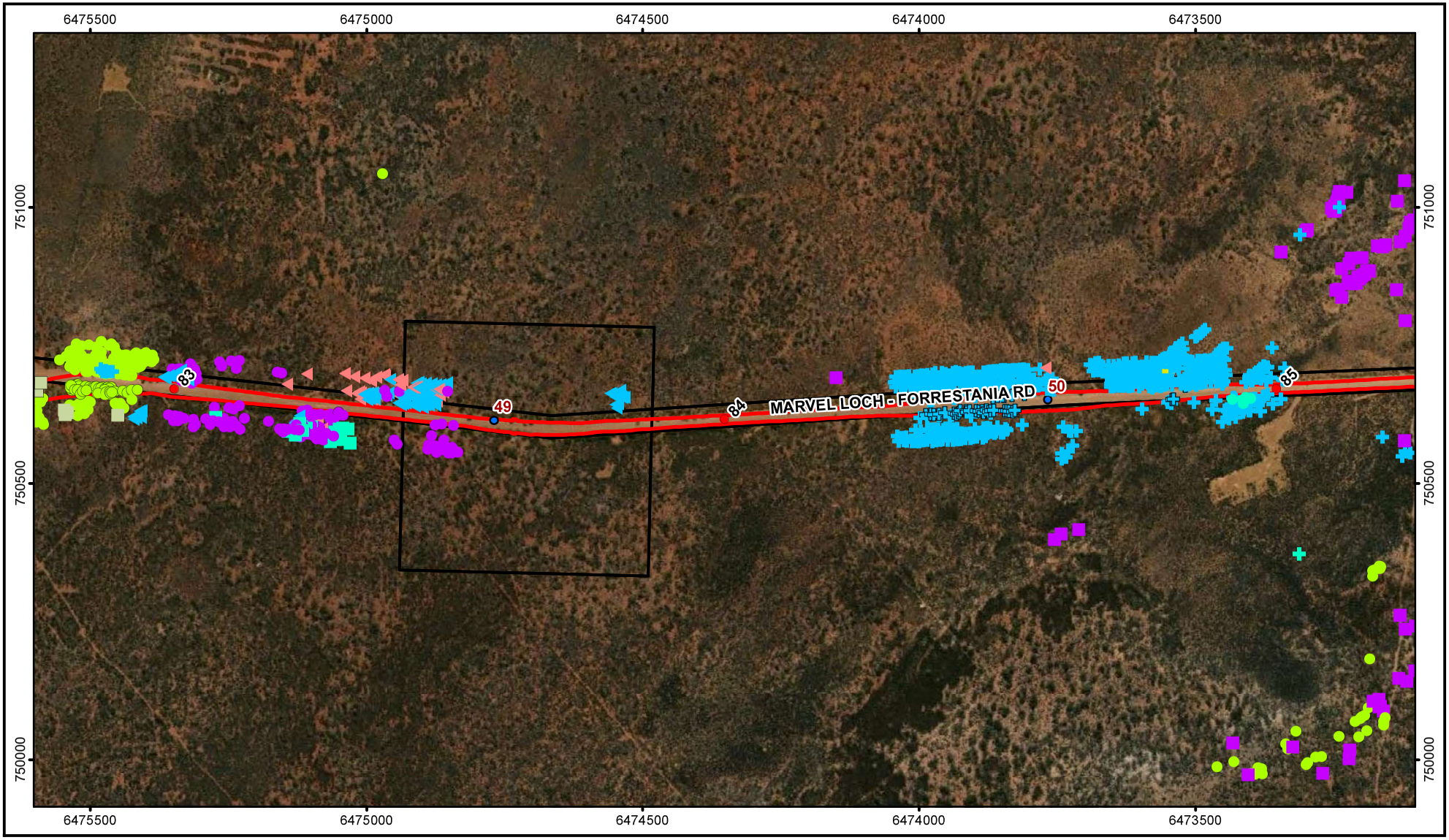
Priority Species
- P1, Edr, Not Taken
- P1, Edr, Taken
- P1, Gli, Not Taken
- P1, Gli, Taken
- P1, Rmd, Not Taken
- P2, Aas, Not Taken
- P2, Eul, Not Taken
- P3, Epo, Not Taken
- P3, Tdi, Not Taken
- P3, Tdi, Taken
- P4, Mif, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 83 km to 85 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

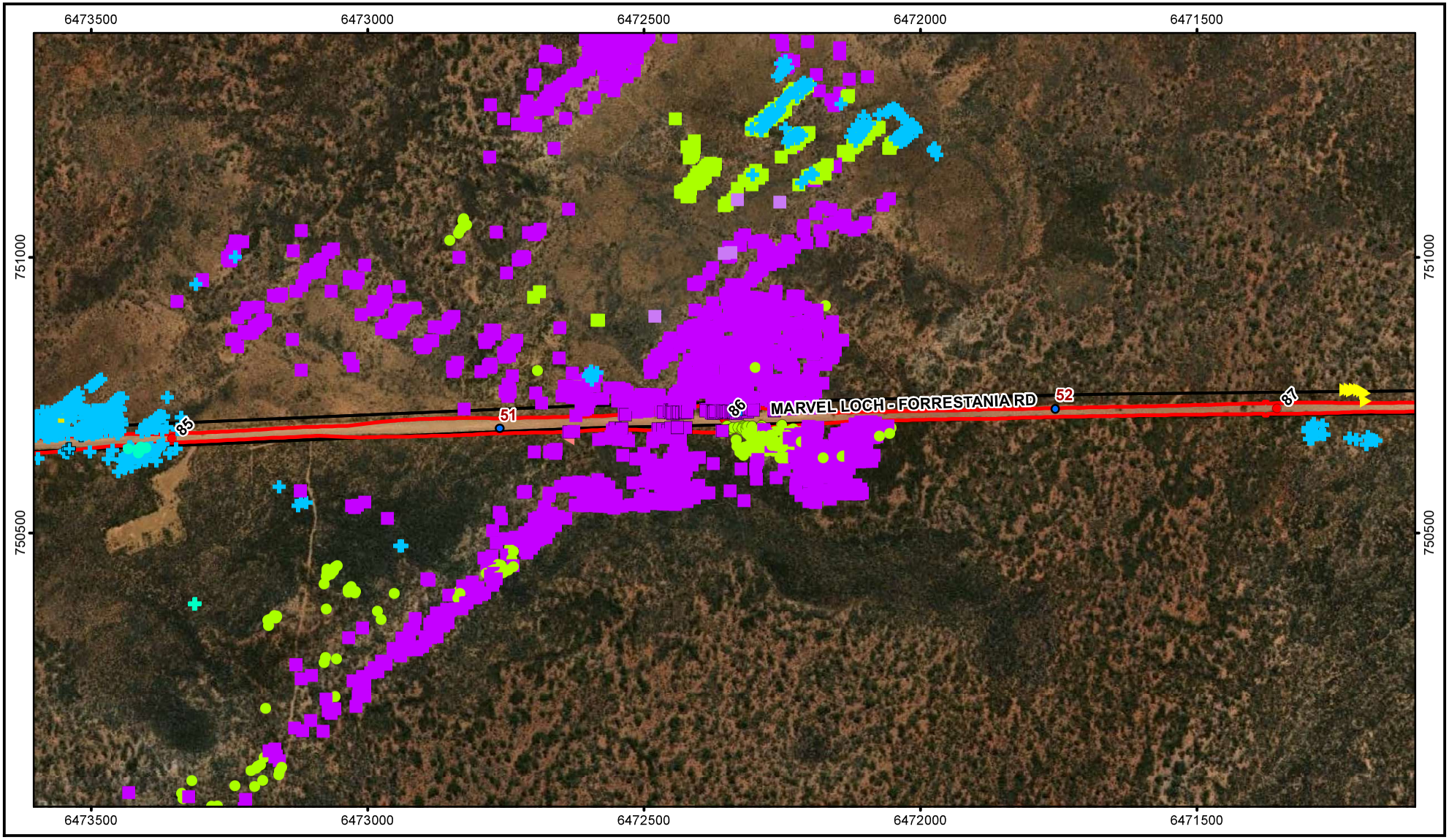
- P1, Cye, Not Taken
- P1, Edr, Not Taken
- P1, Edr, Taken
- P1, Gli, Not Taken
- P1, Gli, Taken
- P1, Rfb, Not Taken
- P1, Rmd, Not Taken
- P1, Rmd, Taken
- P2, Aas, Not Taken
- P2, Eul, Not Taken
- P3, Epo, Not Taken
- P3, Hap, Not Taken
- P3, Prn, Not Taken
- P3, Tdi, Not Taken
- P3, Tdi, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 85 km to 87 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

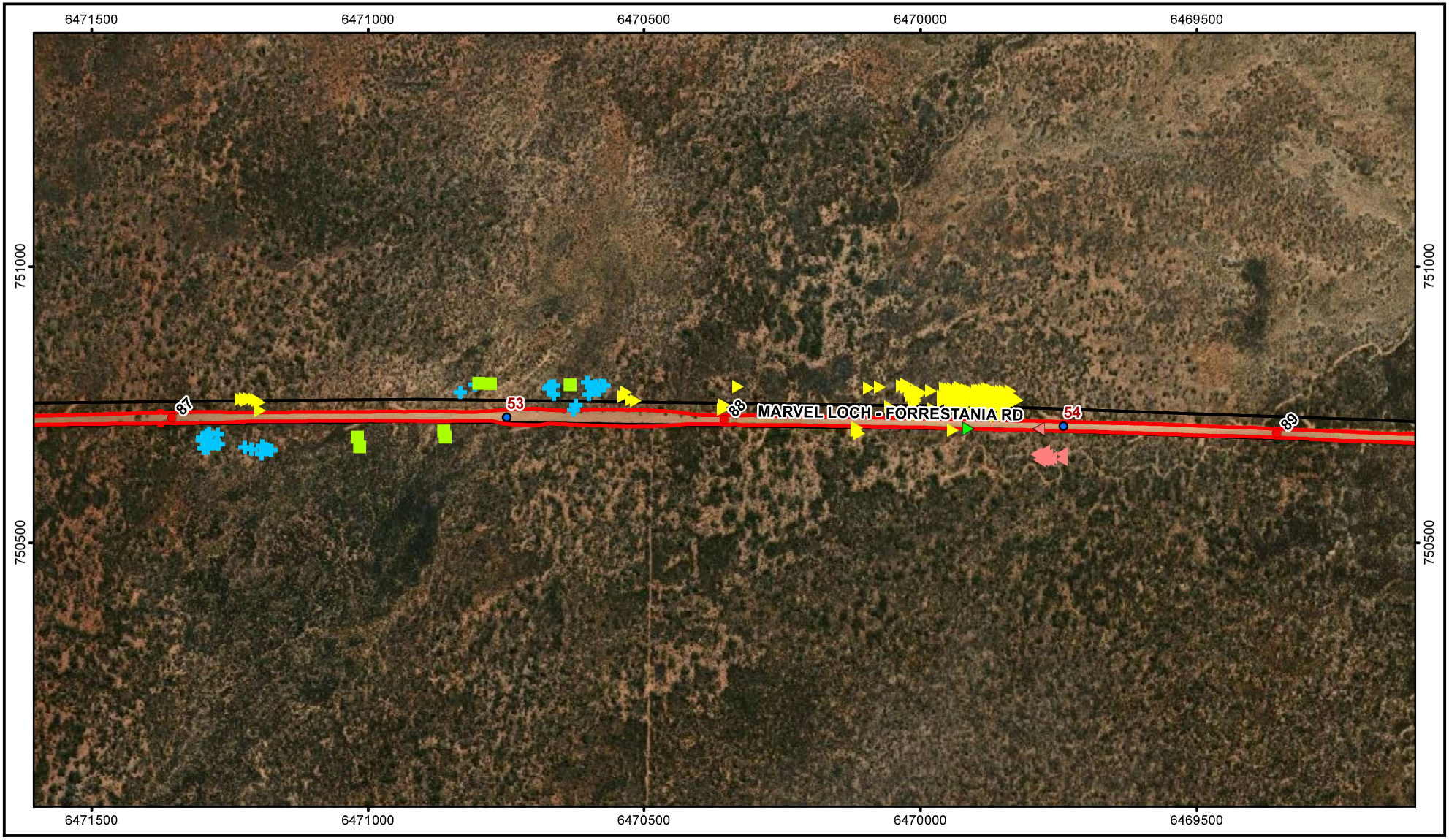
- P1, Cye, Not Taken
- P1, Gli, Not Taken
- P1, Gli, Taken
- P1, Rfb, Not Taken
- P1, Rmd, Not Taken
- P1, Rmd, Taken
- P2, Aas, Not Taken
- P3, Hap, Not Taken
- P3, Hap, Taken
- P3, Phd, Not Taken
- P3, Prn, Not Taken
- P3, Rto, Taken
- P3, Sse, Not Taken
- P4, Mif, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 87 km to 89 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species
- P1, Rmd, Not Taken
- P2, Aas, Not Taken
- P2, Aas, Taken
- P3, Phd, Not Taken
- P4, Mif, Not Taken
- P4, Mif, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 89 km to 91 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

- P1, Bst, Not Taken
- P2, Bgj, Not Taken
- P3, Cci, Not Taken
- P3, Phd, Not Taken
- P3, Vmi, Not Taken
- P3, Vst, Not Taken
- P3, Vst, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 91 km to 93 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

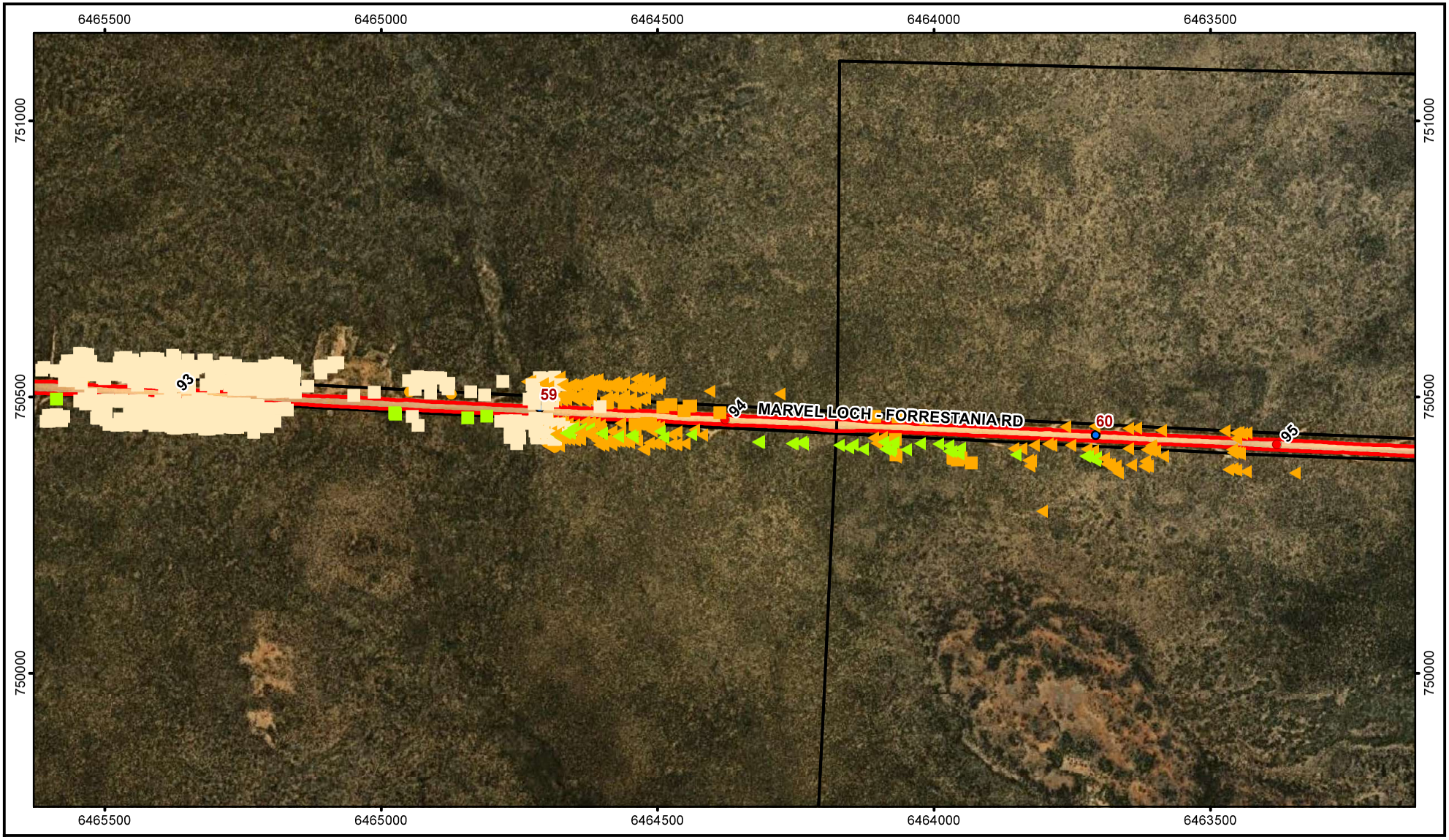
- P1, Bst, Not Taken
- P2, Bgj, Not Taken
- P2, Bgj, Taken
- P2, Bja, Not Taken
- P2, Lyl, Not Taken
- P3, Cci, Not Taken
- P3, Phd, Not Taken
- P3, Prn, Not Taken
- P3, Vgr, Not Taken
- P3, Vmi, Not Taken
- P3, Vst, Not Taken
- P3, Vst, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 93 km to 95 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

- P1, Bst, Not Taken
- P2, Bgj, Not Taken
- P2, Lyl, Not Taken
- P3, Cci, Not Taken
- P3, Phd, Not Taken
- P3, Prn, Not Taken
- P3, Vgr, Not Taken
- P3, Vst, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 95 km to 97 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

- P1, Ahy, Not Taken
- P2, Bgj, Not Taken
- P2, Lyl, Not Taken
- P3, Phd, Not Taken
- P3, Phd, Taken
- P3, Sad, Not Taken
- P3, Vmi, Not Taken
- P3, Vst, Not Taken
- P4, Gne, Not Taken
- P4, Gyd, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 97 km to 99 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

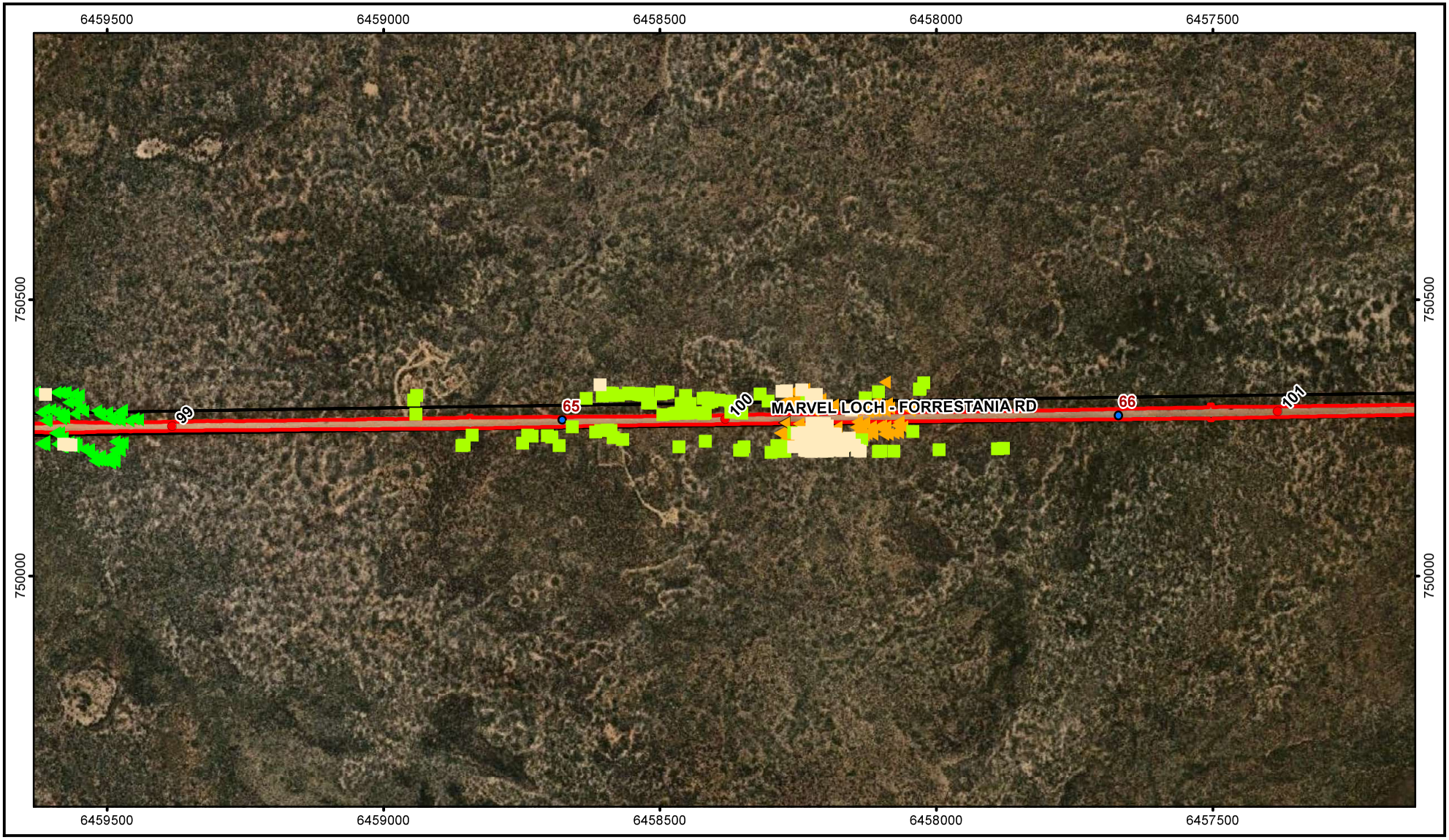
- P1, Ahy, Not Taken
- P2, Bgj, Not Taken
- P2, Dor, Not Taken
- P3, Phd, Not Taken
- P3, Sad, Not Taken
- P3, Vst, Not Taken
- P4, Gyd, Not Taken
- P4, Wb, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 99 km to 101 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

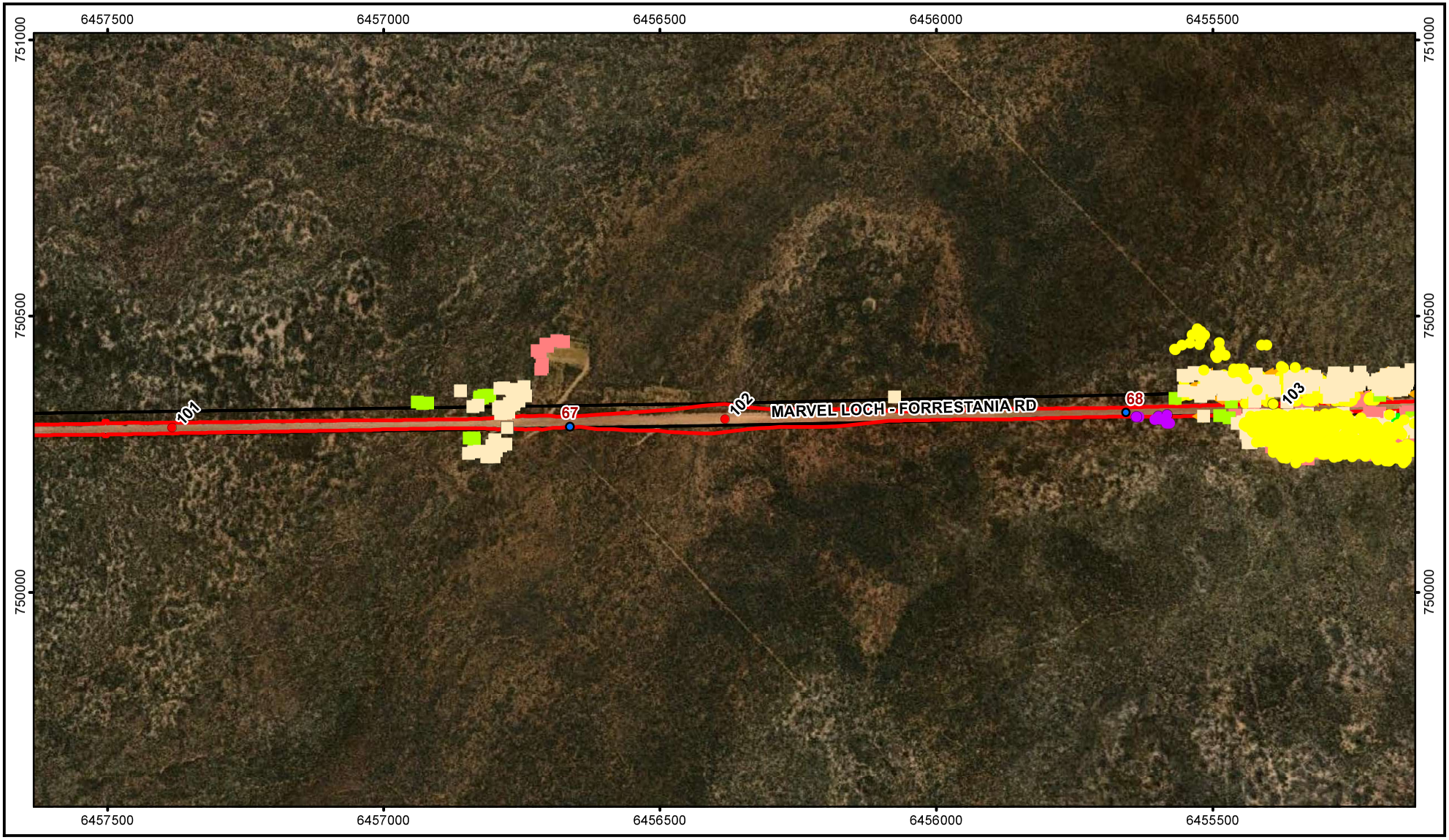
Priority Species P2, Bgj, Not Taken; P2, Bgj, Taken; P2, Dor, Not Taken; P3, Phd, Not Taken; P3, Vst, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 101 km to 103 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

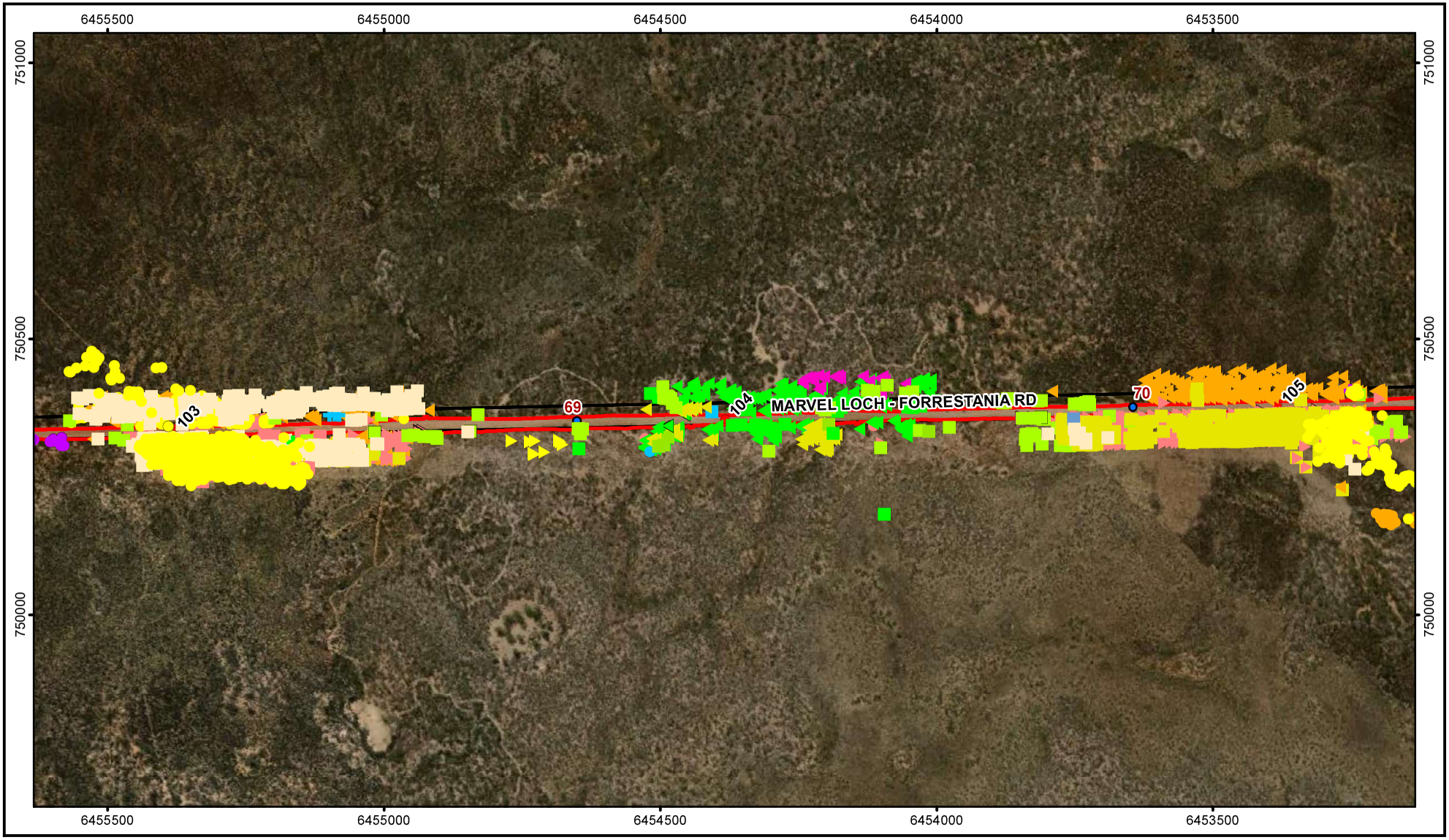
- P1, Cmh, Not Taken
- P1, Cmh, Taken
- P1, Edr, Not Taken
- P1, Edr, Taken
- P1, Mip, Not Taken
- P1, Thy, Not Taken
- P2, Bgj, Not Taken
- P2, Bgj, Taken
- P3, Btp, Not Taken
- P3, Btp, Taken
- P3, Phd, Not Taken
- P3, Prn, Not Taken
- P3, Vst, Not Taken
- P3, Vst, Taken
- P4, Gne, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 103 km to 105 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

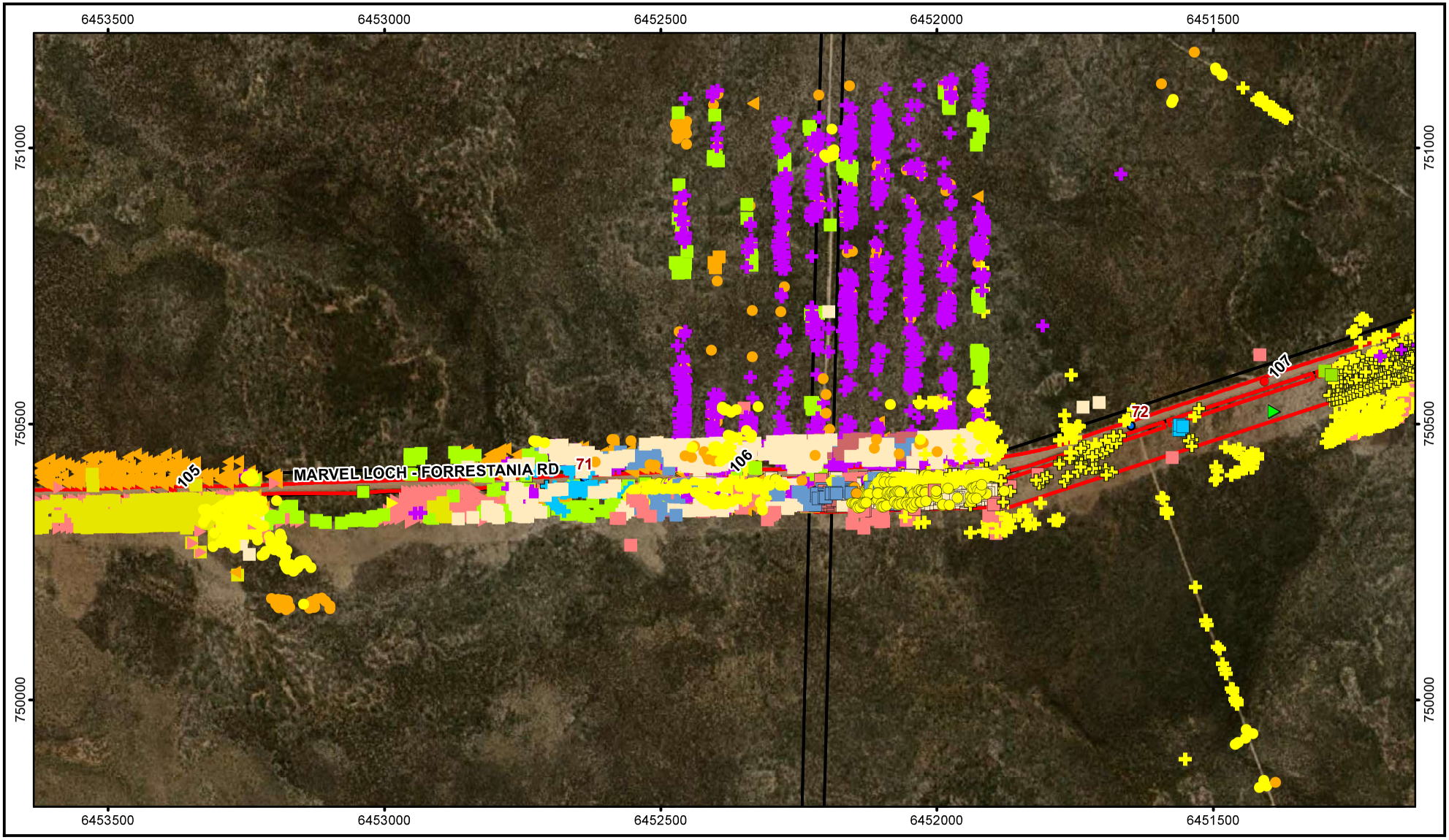
- P1, Ahy, Not Taken
- P1, Bst, Not Taken
- P1, Cmh, Not Taken
- P1, Cmh, Taken
- P1, Dca, Not Taken
- P1, Edr, Not Taken
- P1, Edr, Taken
- P1, Mip, Not Taken
- P1, Rmd, Not Taken
- P1, Thy, Not Taken
- P2, Bgj, Not Taken
- P2, Bgj, Taken
- P2, Dor, Not Taken
- P2, Dor, Taken
- P2, Lna, Not Taken
- P2, Meo, Not Taken
- P3, Btp, Not Taken
- P3, Btp, Taken
- P3, Eex, Not Taken
- P3, Gci, Not Taken
- P3, Phd, Not Taken
- P3, Phd, Taken
- P3, Prn, Not Taken
- P3, Sad, Not Taken
- P3, Vmi, Not Taken
- P3, Vst, Not Taken
- P4, Gne, Not Taken
- P4, Gne, Taken
- P4, Mif, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 105 km to 107 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

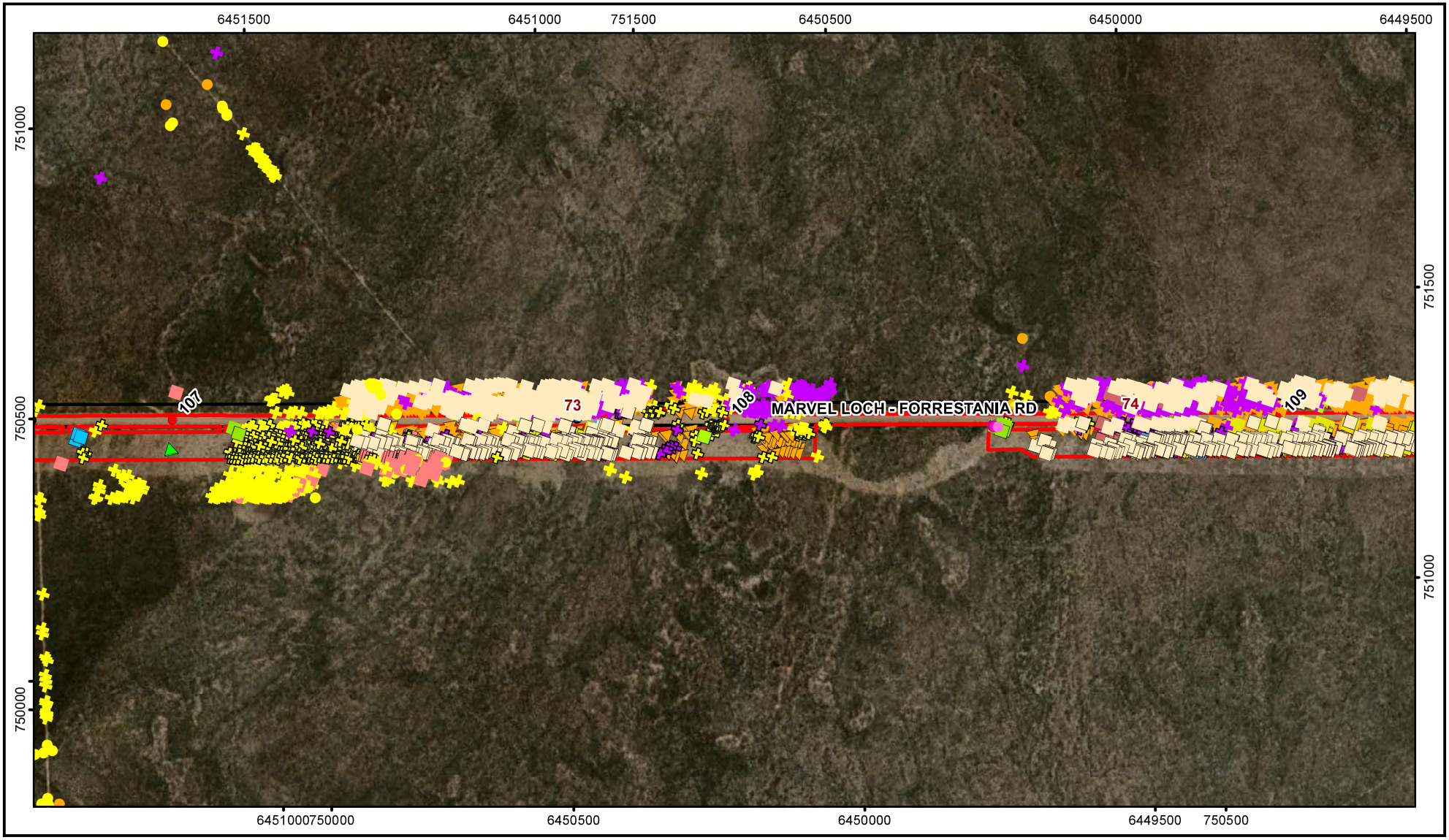
- P1, Bst, Not Taken
- P1, Bst, Taken
- P1, Cmh, Not Taken
- P1, Cmh, Taken
- P1, Mie, Not Taken
- P1, Mie, Taken
- P1, Mip, Taken
- P1, Rmd, Not Taken
- P1, Rmd, Taken
- P1, Thy, Not Taken
- P1, Thy, Taken
- P2, Bgj, Not Taken
- P2, Bgj, Taken
- P3, Btp, Not Taken
- P3, Btp, Taken
- P3, Cci, Not Taken
- P3, Gci, Taken
- P3, Phd, Not Taken
- P3, Phd, Taken
- P3, Prn, Not Taken
- P3, Prn, Taken
- P3, Sad, Not Taken
- P3, Sad, Taken
- P3, Vgr, Not Taken
- P3, Vgr, Taken
- P3, Vmi, Not Taken
- P3, Vmi, Taken
- P3, Vst, Not Taken
- P3, Vst, Taken
- P4, Gne, Not Taken
- P4, Gne, Taken
- P4, Mif, Not Taken
- P4, Mif, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 107 km to 109 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

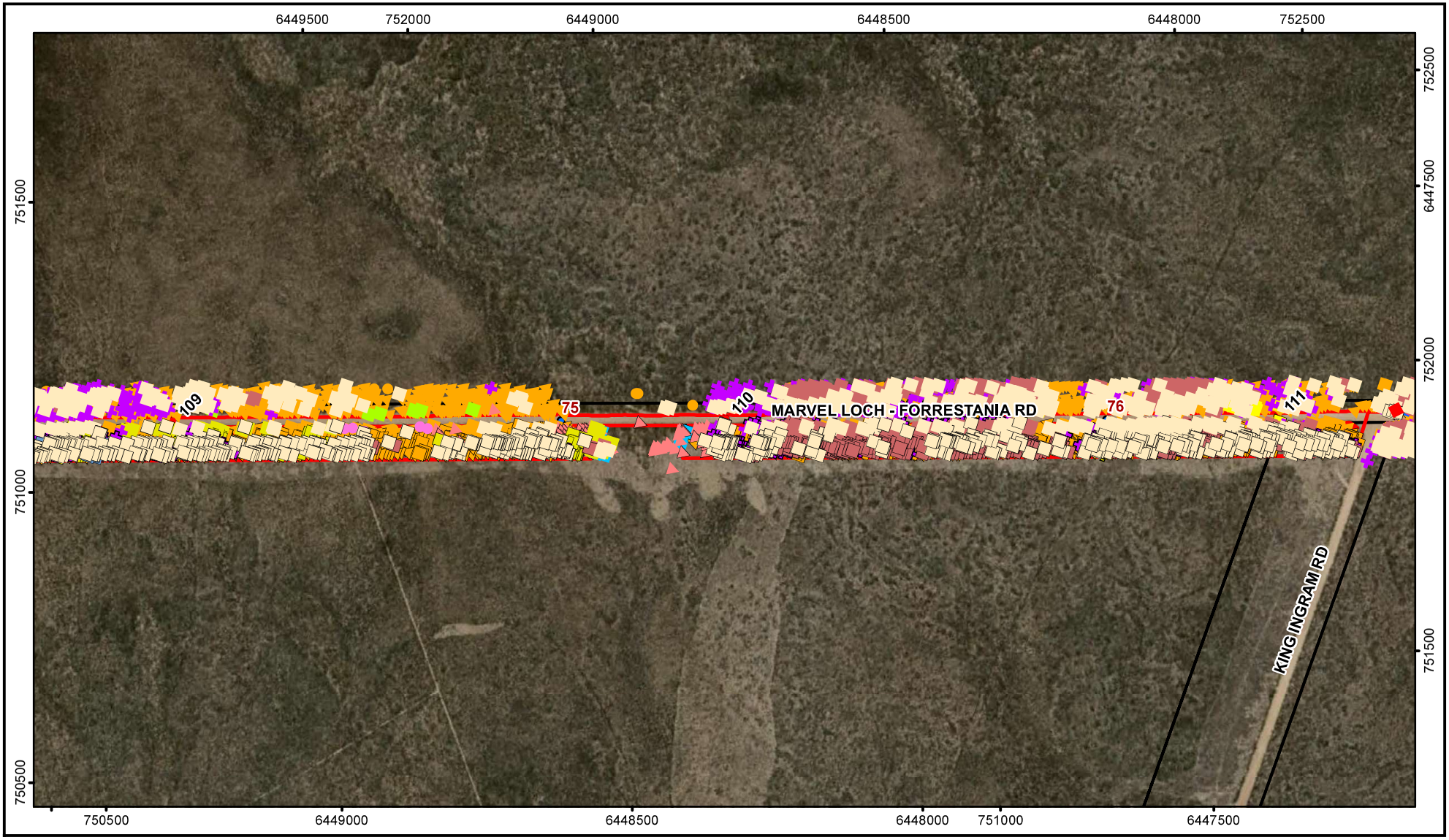
- P1, Bst, Not Taken
- P1, Bst, Taken
- P1, Cmh, Not Taken
- P1, Cmh, Taken
- P1, Eni, Not Taken
- P1, Eni, Taken
- P1, Mie, Not Taken
- P1, Mie, Taken
- P1, Thy, Not Taken
- P1, Thy, Taken
- P2, Bgj, Not Taken
- P2, Bgj, Taken
- P3, Btp, Not Taken
- P3, Btp, Taken
- P3, Cci, Not Taken
- P3, Cci, Taken
- P3, Gci, Not Taken
- P3, Gci, Taken
- P3, Phd, Not Taken
- P3, Phd, Taken
- P3, Prn, Not Taken
- P3, Prn, Taken
- P3, Sad, Not Taken
- P3, Sad, Taken
- P3, Vgr, Not Taken
- P3, Vgr, Taken
- P3, Vmi, Not Taken
- P3, Vmi, Taken
- P3, Vst, Not Taken
- P3, Vst, Taken
- P4, Mif, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 109 km to 111 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

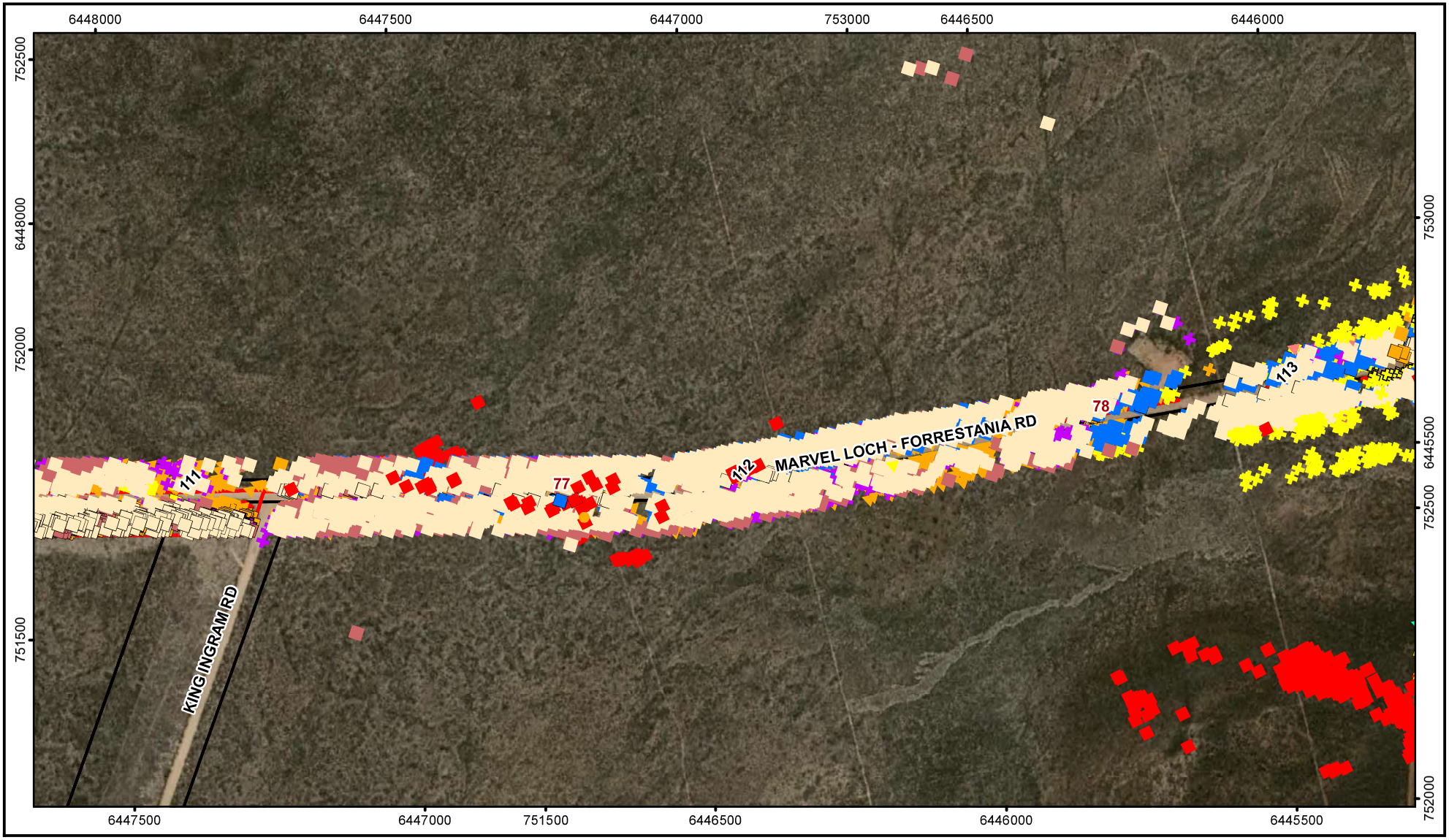
- T, Bdo, Not Taken
- P1, Bst, Not Taken
- P1, Bst, Taken
- P1, Eni, Not Taken
- P1, Eni, Taken
- P1, Mie, Not Taken
- P1, Mie, Taken
- P1, Thy, Not Taken
- P1, Thy, Taken
- P2, Bgj, Not Taken
- P2, Bgj, Taken
- P3, Cci, Not Taken
- P3, Cci, Taken
- P3, Cyc, Not Taken
- P3, Cyc, Taken
- P3, Gci, Not Taken
- P3, Gci, Taken
- P3, Phd, Not Taken
- P3, Prn, Not Taken
- P3, Prn, Taken
- P3, Rto, Not Taken
- P3, Vgr, Not Taken
- P3, Vgr, Taken
- P3, Vmi, Not Taken
- P3, Vmi, Taken
- P3, Vst, Not Taken
- P3, Vst, Taken
- P4, Gne, Not Taken
- P4, Gne, Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 111 km to 113 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

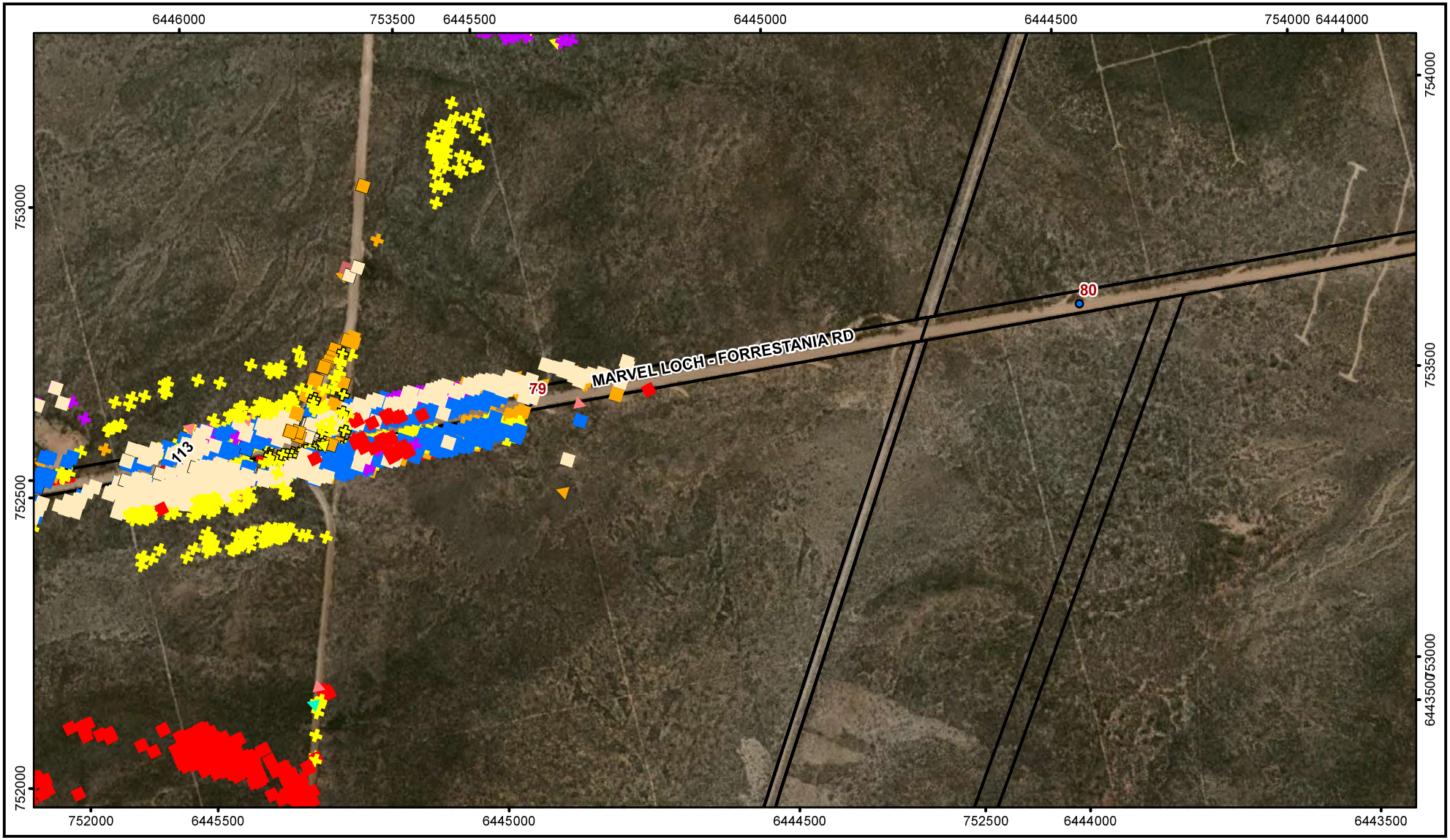
- T, Bdo, Not Taken
- T, Bdo, Taken
- P1, Bst, Not Taken
- P1, Meg, Not Taken
- P1, Mie, Not Taken
- P1, Mie, Taken
- P1, Thy, Not Taken
- P1, Thy, Taken
- P2, Aas, Not Taken
- P2, Bgj, Not Taken
- P2, Bgj, Taken
- P2, Bja, Not Taken
- P2, Dsr, Not Taken
- P2, Lyl, Not Taken
- P3, Cci, Not Taken
- P3, Cci, Taken
- P3, Cyc, Not Taken
- P3, Cyc, Taken
- P3, Rto, Not Taken
- P3, Rto, Taken
- P3, Rtr, Not Taken
- P3, Vgr, Not Taken
- P3, Vgr, Taken
- P3, Vst, Not Taken
- P3, Vst, Taken
- P4, Gne, Not Taken

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10049/1 - Chn 113 km to 115 km - Flora - Priority Species

DRAFT

0 0.2 km

N



Drawn: CAD Resources (08 9246 3242), Date: Oct 2023,
CAD Ref: a2765_MR_MTH_38_03_02, Rev: B
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Application CPS 10049/1
- Cadasta Bdry

Priority Species

- T, Bdo, Not Taken
- P1, Bst, Not Taken
- P1, Meg, Not Taken
- P1, Mie, Not Taken
- P1, Mie, Taken
- P1, Thy, Not Taken
- P2, Aas, Not Taken
- P2, Bgj, Not Taken
- P2, Bgj, Taken
- P2, Bja, Not Taken
- P2, Bja, Taken
- P2, Dsr, Not Taken
- P3, Cci, Not Taken
- P3, Cci, Taken
- P3, Rto, Not Taken
- P3, Rto, Taken
- P3, Vgr, Not Taken
- P3, Vst, Not Taken
- P3, Vst, Taken
- P4, Gne, Not Taken

Appendix 8. Species of Interest (SOI) of the Entire Study Area

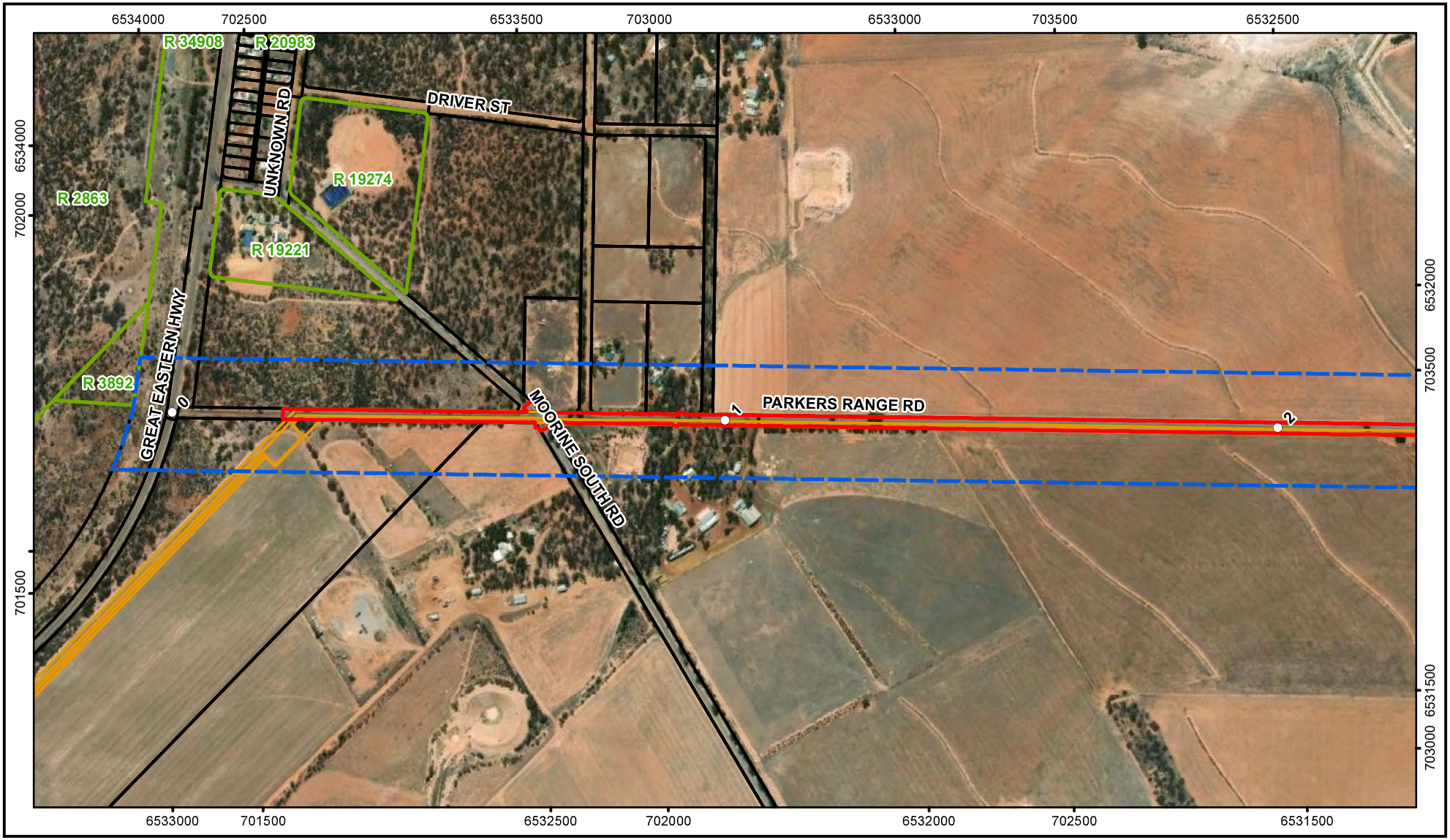
Legend – Species of Interest (SOI)

WA Cons Status	Abbreviation	Taxon Name
SOI	Aml	*Acacia intricata* Marvel Loch - Southern Cross form (WB40115)
SOI	Anr	*Acacia neurophylla* subsp. Resinous veins (GC-797)
SOI	Amr	*Acacia* sp. Moorine Rock (BR Maslin 4474)
SOI	Bau	*Banksia audax*
SOI	Cki	*Chamelaucium* sp. King Ingram Rd (MHGG-035)
SOI	Com	*Coopernookia* sp. Mt Holland (G. Cockerton-381)
SOI	Cyz	*Cryptandra* sp. Zigzag (G. Cockerton-319)
SOI	Dgf	*Drummondita* sp. green flowers (L. Shelton-304)
SOI	Dhs	*Drummondita* sp. hairy sepals (L. Shelton-409)
SOI	Esg	*Eucalyptus* aff. *salubris* pruinose branchlet form (G. Cockerton & J. Warden WB40196)
SOI	Emh	*Eutaxia* sp. Mt Holland (G. Cockerton & G. Grigg-758)
SOI	Esc	*Eutaxia* sp. Southern Cross (G. Grigg-010)
SOI	Gcu	*Grevillea communis* ms (P.M. Olde)
SOI	Gco	*Grevillea comosa* ms (P.M. Olde 91/14, 7 Sep 1991)
SOI	Ghm	*Grevillea* sp. aff. *huegelii* Marvel Loch. P.M. Olde 91/44 NSW782729
SOI	Hil	*Hibbertia* sp. Forrestania (*H. lateritica* ms, K.R. Thiele)
SOI	Lsp	*Leptospermum* aff. *spinescens* (DL-164)
SOI	Msp	*Melaleuca* aff. *spicigera* GC-638, 765
SOI	Pab	*Phebalium* aff. *brachycalyx*
SOI	Pal	*Phebalium* aff. *laevigatum* eastern form, pink fls (L. Shelton-492)
SOI	Pam	*Phebalium* aff. *microphyllum* tuberculate stems (LS-486)
SOI	Pay	*Phebalium* aff. P. sp. Yerilgee Sandplain (J. Jackson 223) (P!)
SOI	Pat	*Phebalium* aff. *tuberculosum* short leaf (G. Cockerton 333)
SOI	P12	*Phebalium filifolium* (12mm leaf)
SOI	Pf6	*Phebalium filifolium* (6mm leaf)
SOI	Pfl	*Phebalium filifolium* long leaf form
SOI	Pfs	*Phebalium filifolium* sens. lat. (short leaf form)
SOI	Pmg	*Phebalium megaphyllum*
SOI	Pbh	*Phebalium* sp. British Hill (G. Cockerton, S. Cockerton, J. Warden WB41040)
SOI	Pdr	*Phebalium* sp. Dunbar Road GC-544
SOI	Pmu	*Phebalium* sp. mucronate
SOI	Pov	*Phebalium* sp. ovate (WB40864)
SOI	Pog	*Phebalium* sp. Ovate glossy (GC-619)
SOI	Prb	*Phebalium* sp. Parker Range Rd (broad leaved variant)
SOI	Prr	*Phebalium* sp. Parker Range Rd (WB40838)
SOI	Prs	*Phebalium* sp. Parker Range Road sens. strict. (G. Cockerton & B. Loudon WB40838)
SOI	Prt	*Phebalium* sp. Retuse tip (GC-426)
SOI	Psp	*Phebalium* sp. supermegawarty (GC-396)
SOI	Pts	*Phebalium tuberculosum* sens. lat. (short leaf form)
SOI	Prc	*Prostanthera* aff. *campbellii* (LS-125)

Northern Section 10197/1

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 0 km to 2 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Reserves
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 2 km to 4 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

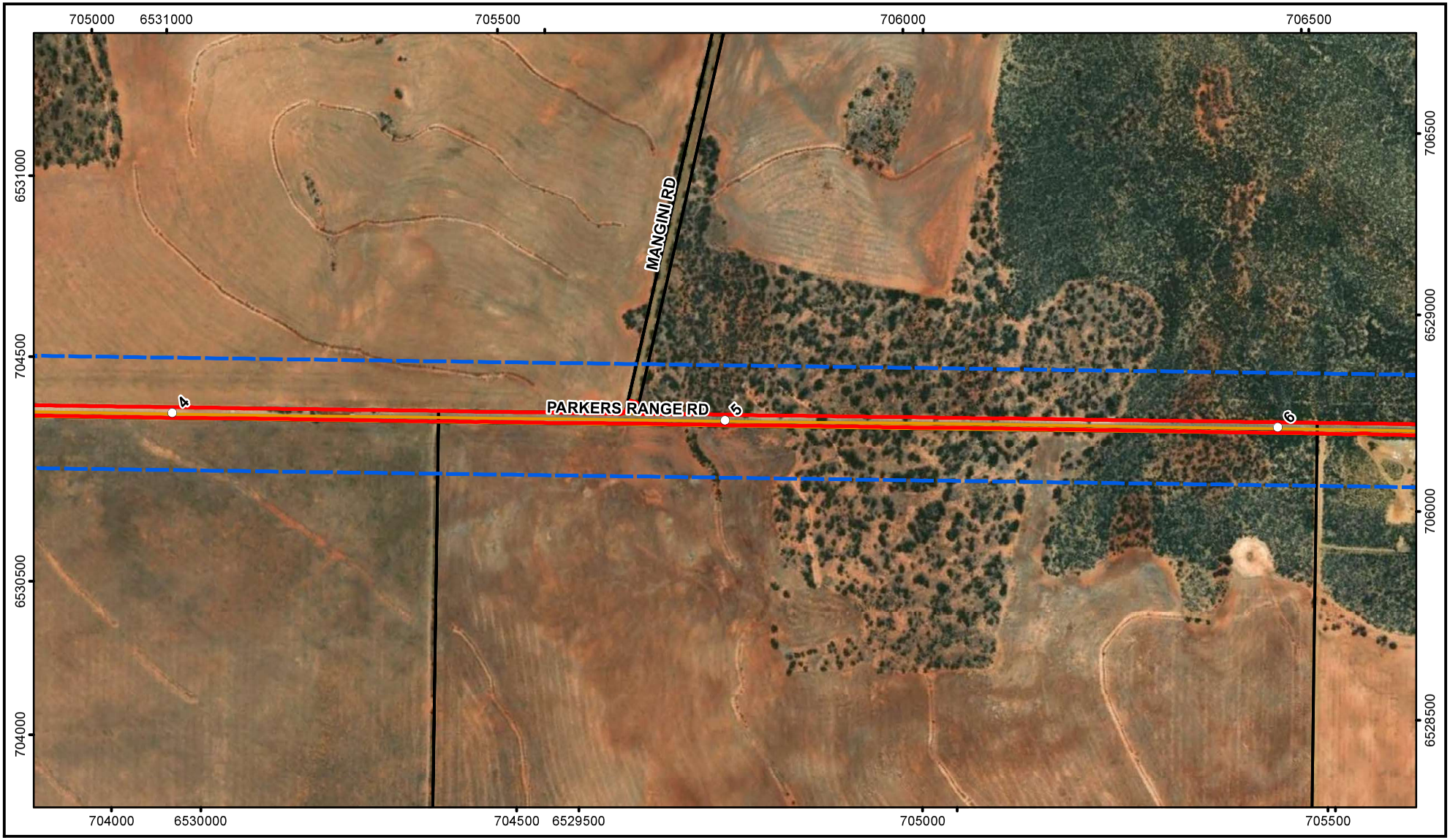
Legend
- Centreline Chainage *Flora SOI*
- Gne - Not Taken
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 4 km to 6 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

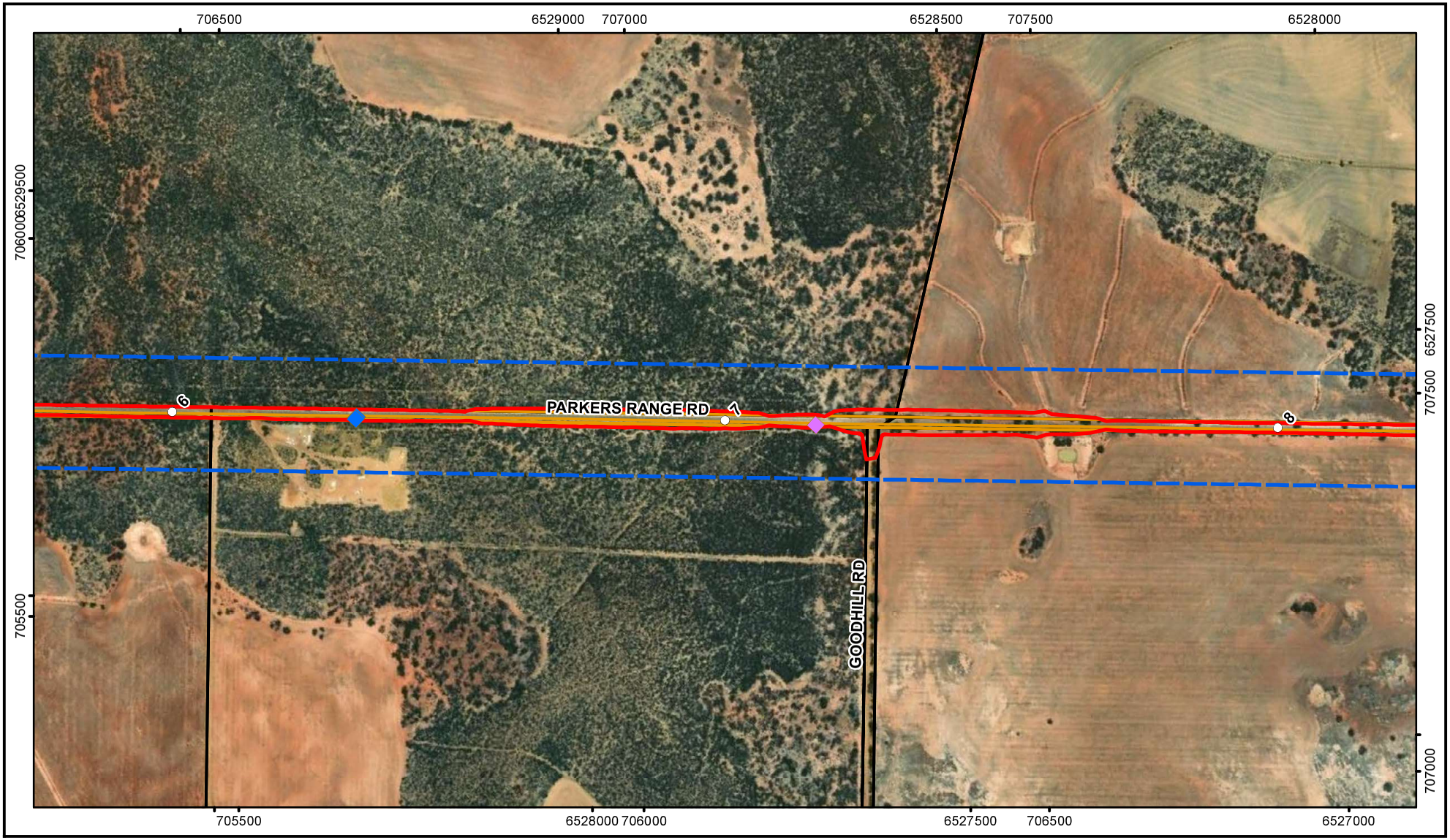
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 6 km to 8 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

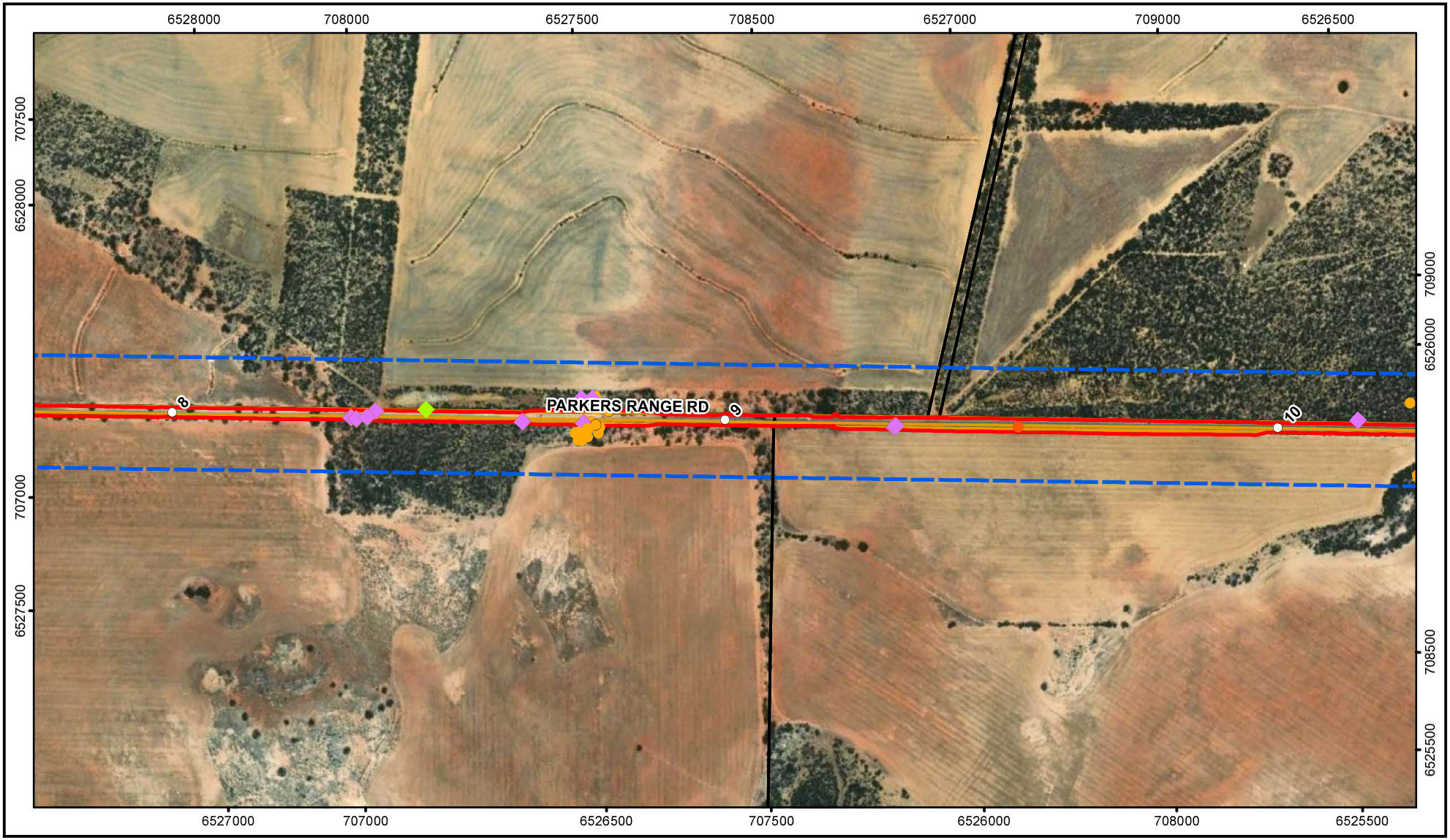
Legend
- Centreline Chainage *Flora SOI*
- Rfb - Taken MS 1118
- Rtr - Taken MS 1118
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 8 km to 10 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

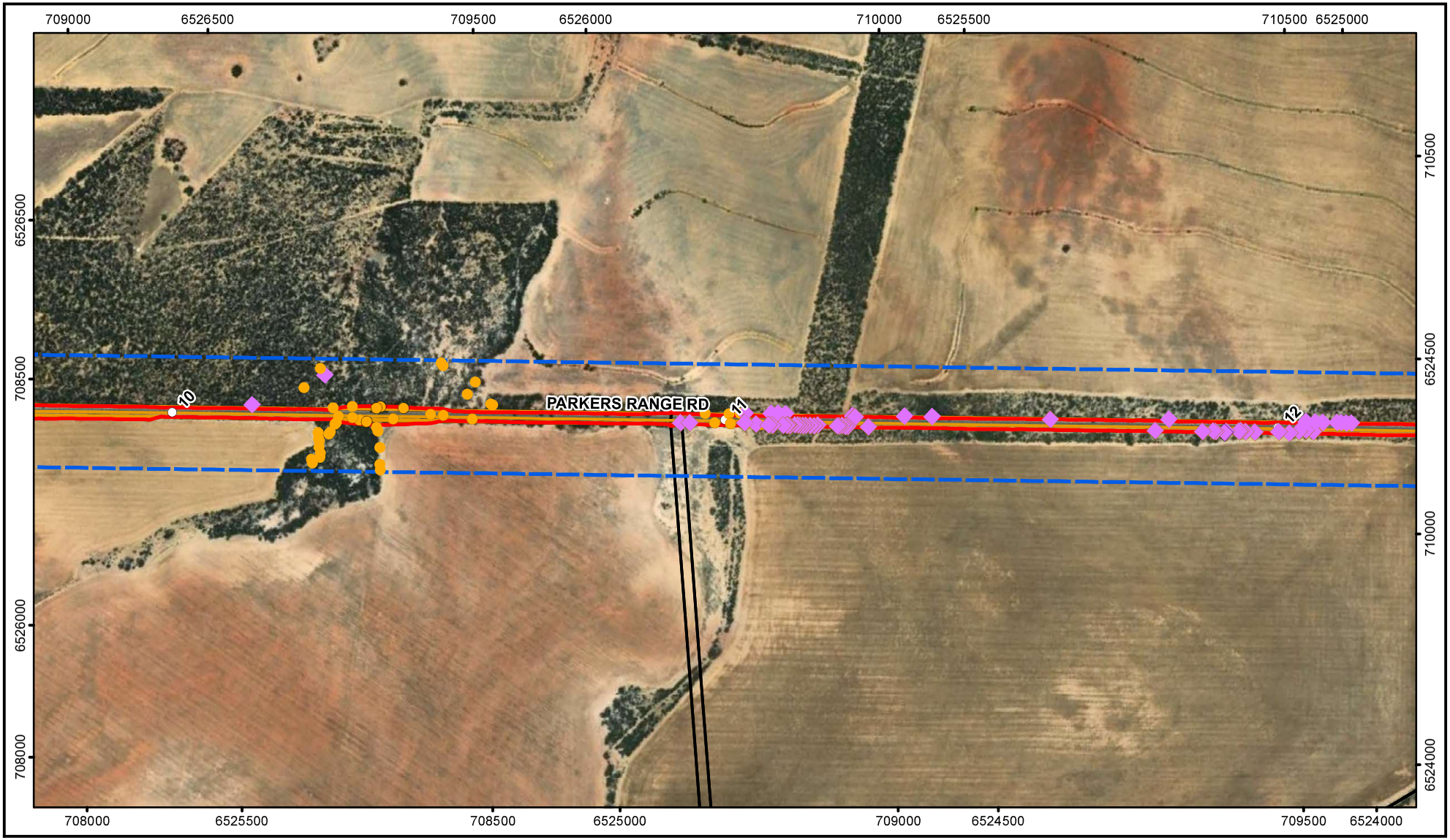
- Centreline Chainage *Flora SOI*
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry
- Aco - Taken MS 1118
- Acr - Not Taken
- Acr - Taken
- Acr - Taken MS 1118
- Lja - Not Taken
- Rtr - Not Taken
- Rtr - Taken MS 1118

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 10 km to 12 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage *Flora SOI*
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry
- Acr - Taken
- Acr - Not Taken
- Acr - Taken MS 1118
- Rtr - Not Taken
- Rtr - Taken MS 1118
- Rtr - Taken

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 12 km to 14 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

Flora SOI

- Aco - Taken
- Aco - Taken MS 1118
- Rtr - Not Taken
- Rtr - Taken
- Rtr - Taken MS 1118

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 14 km to 16 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

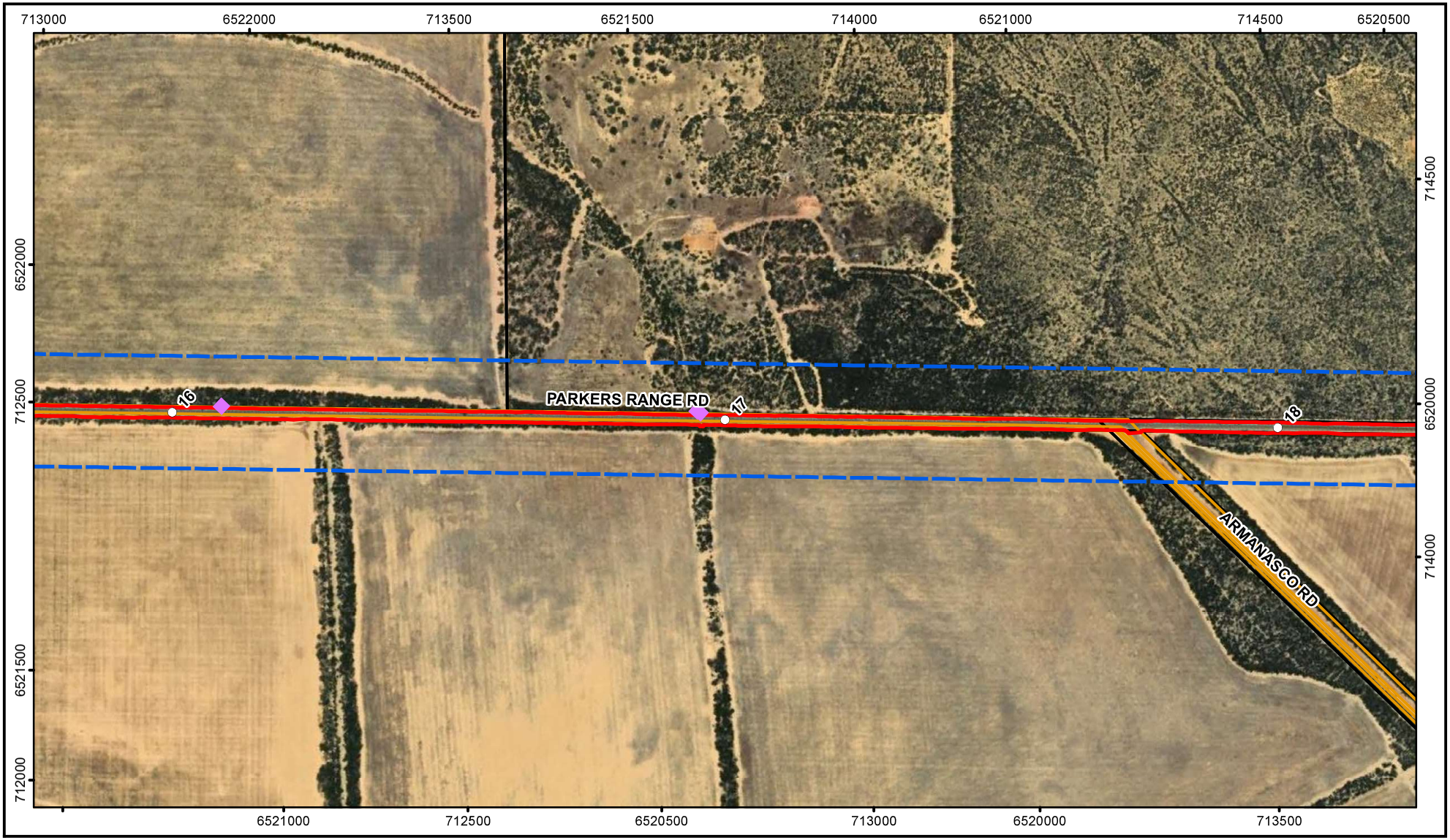
Legend
- Centreline Chainage *Flora SOI*
- Rtr - Not Taken
- Rtr - Taken MS 1118
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 16 km to 18 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

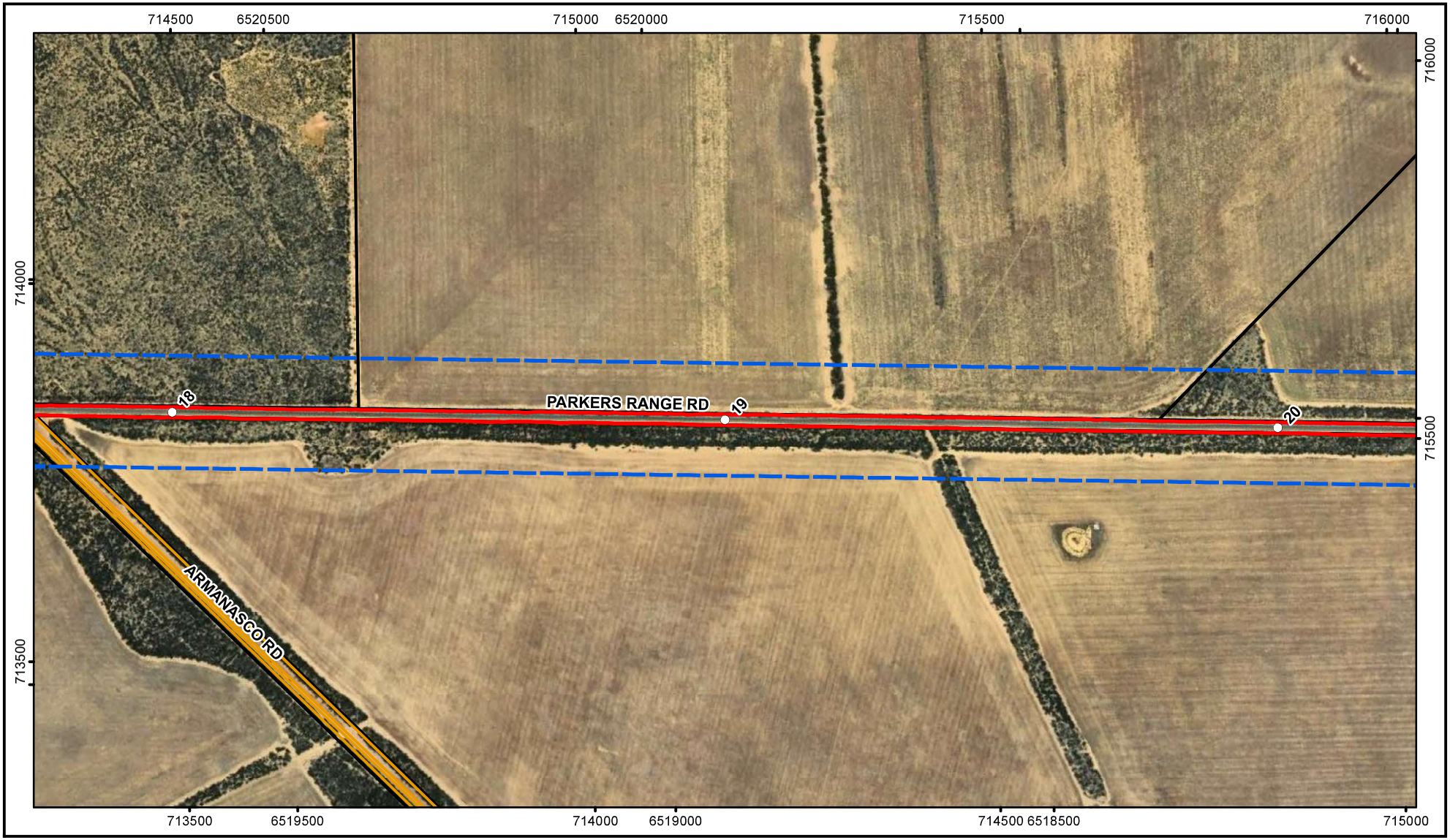
Legend
- Centreline Chainage *Flora SOI*
- Rtr - Not Taken
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 18 km to 20 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

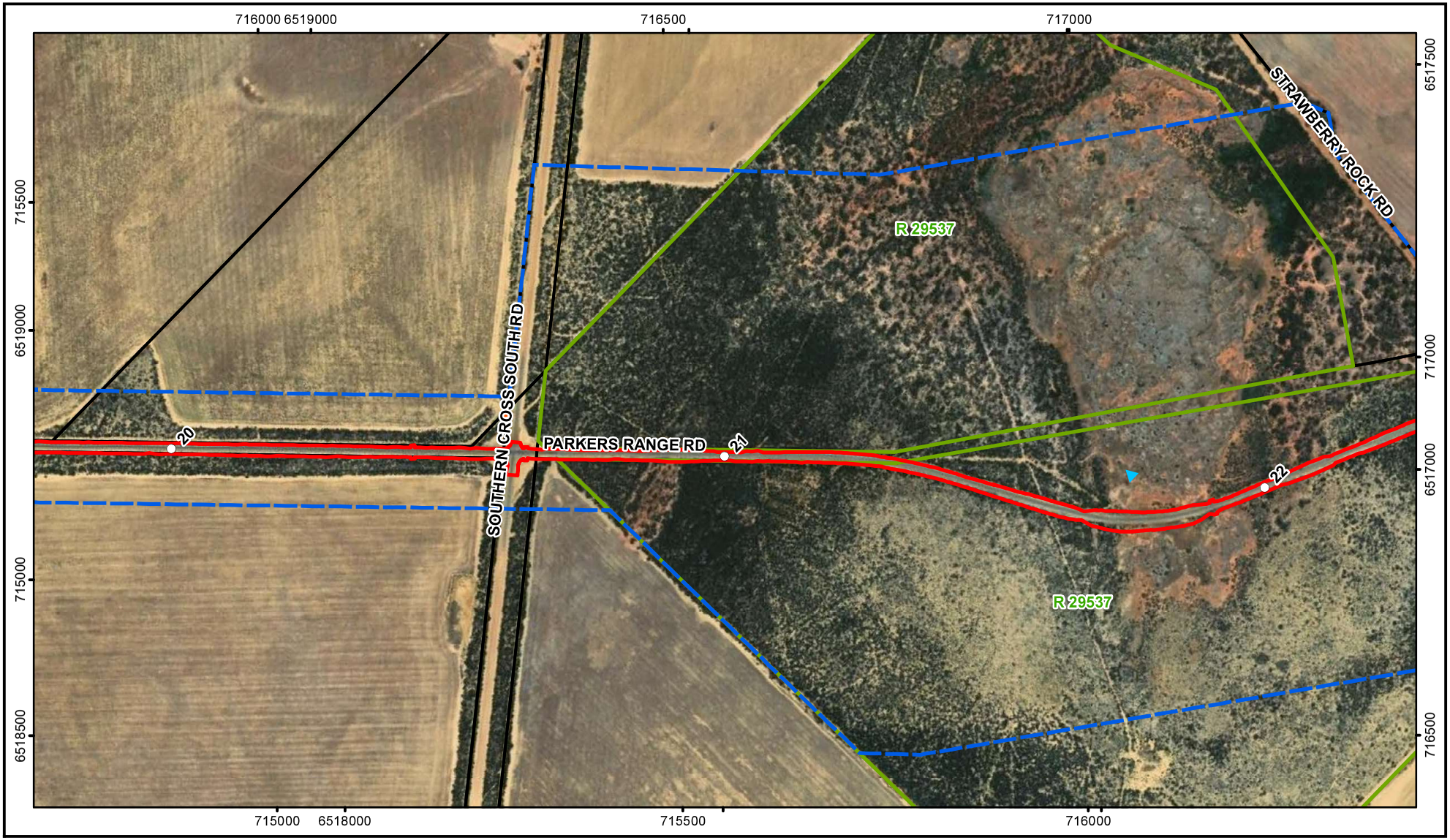
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- MS1118
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 20 km to 22 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

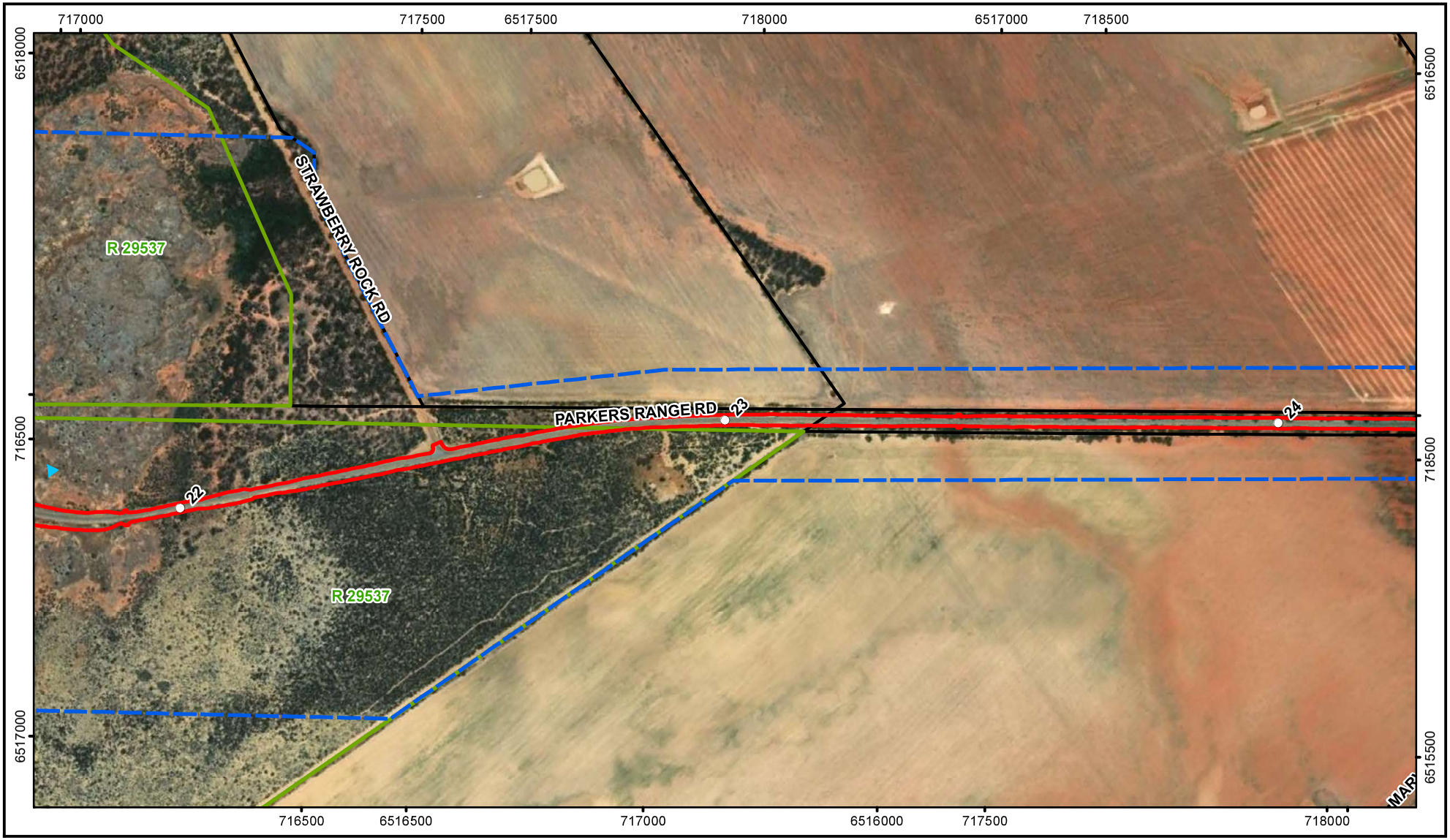
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Reserves
- Cadasta Bdry
- *Flora SOI*
- Aco - Not Taken
- Wb - Not Taken

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 22 km to 24 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- Reserves
- *Flora SOI*
- Wb - Not Taken
- CPS 10197/1
- Cadasta Bdry
- Survey Limit

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 24 km to 26 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

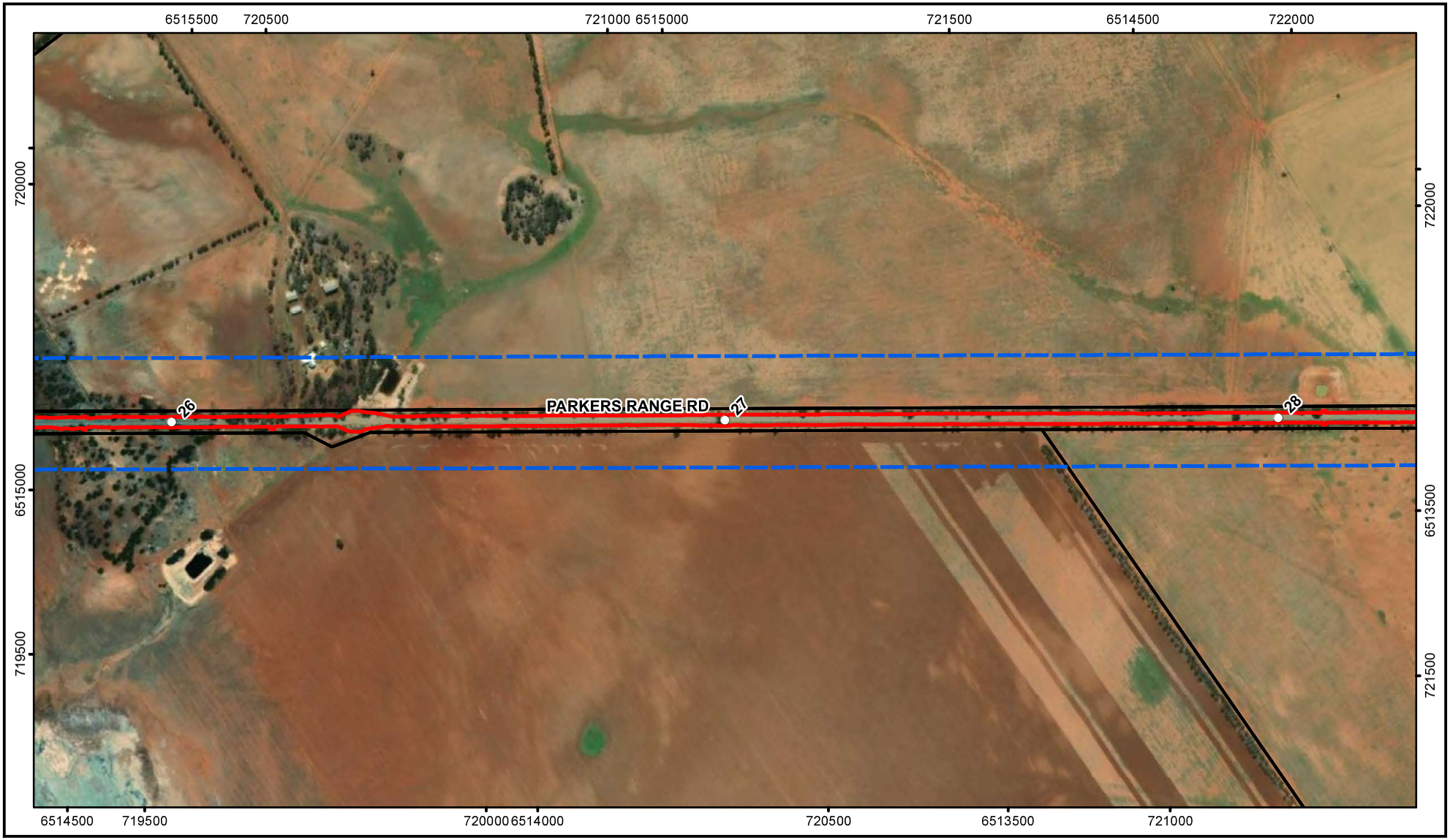
Legend
- Centreline Chainage *Flora SOI*
- Epo - Not Taken
- Epo - Taken
- Eul - Not Taken
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 26 km to 28 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

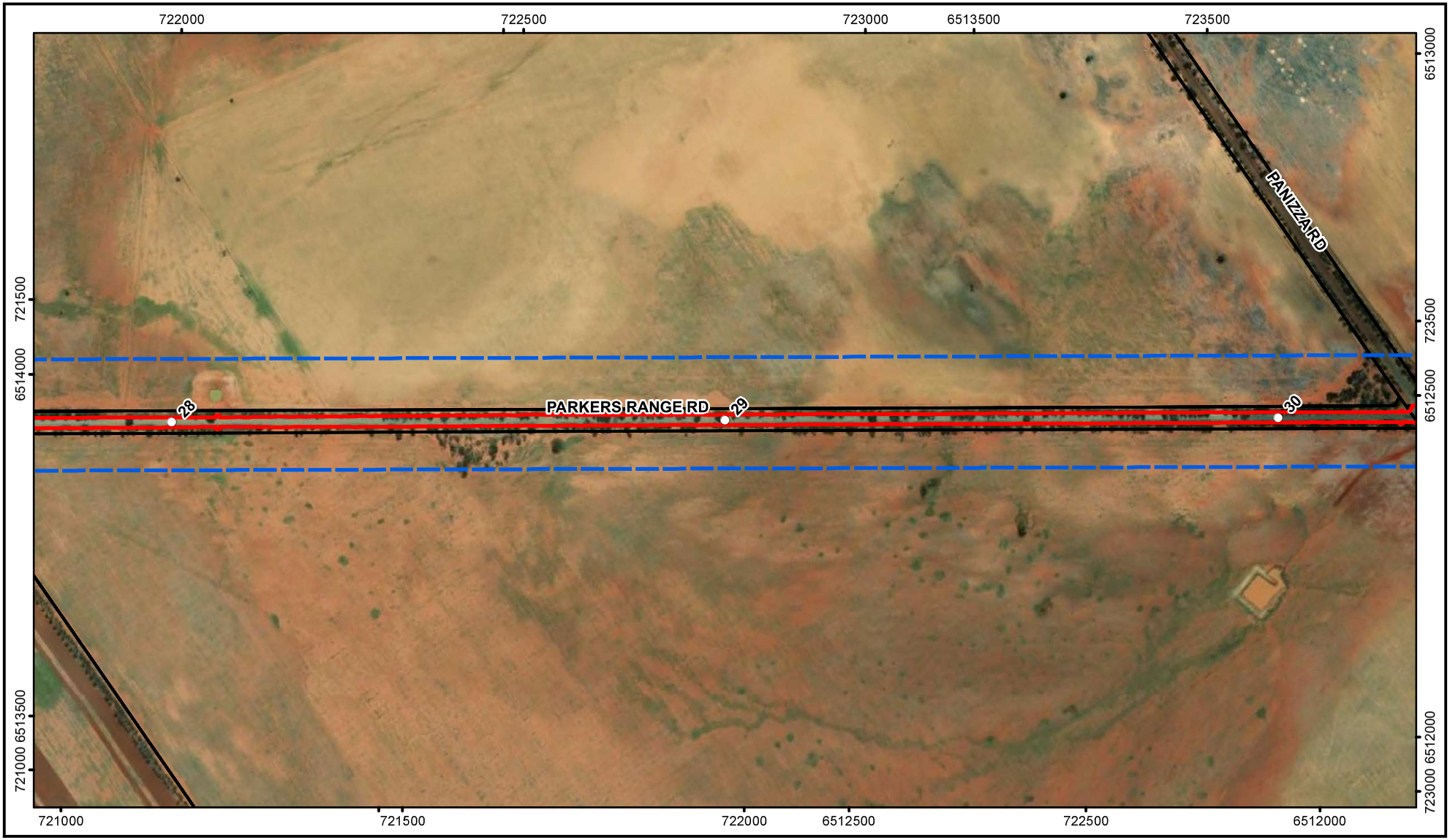
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 28 km to 30 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 30 km to 32 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
Centreline Chainage *Flora SOI* Aco - Not Taken Eul - Taken
CPS 10197/1
Survey Limit
Cadasta Bdry

0 0.2 km
N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 32 km to 34 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- *Flora SOI*
- Eul - Taken
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 34 km to 36 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

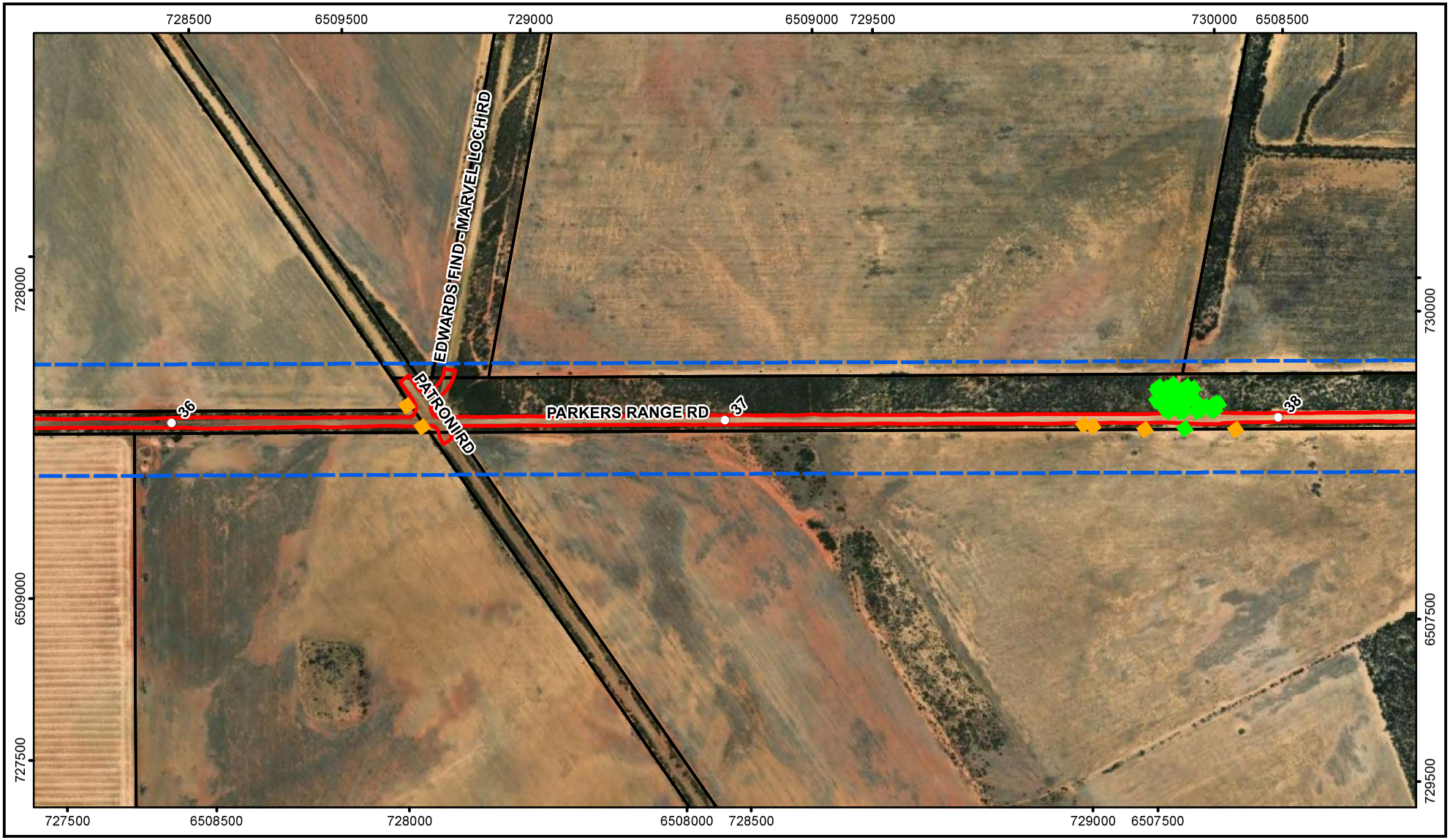
Legend
- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 36 km to 38 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

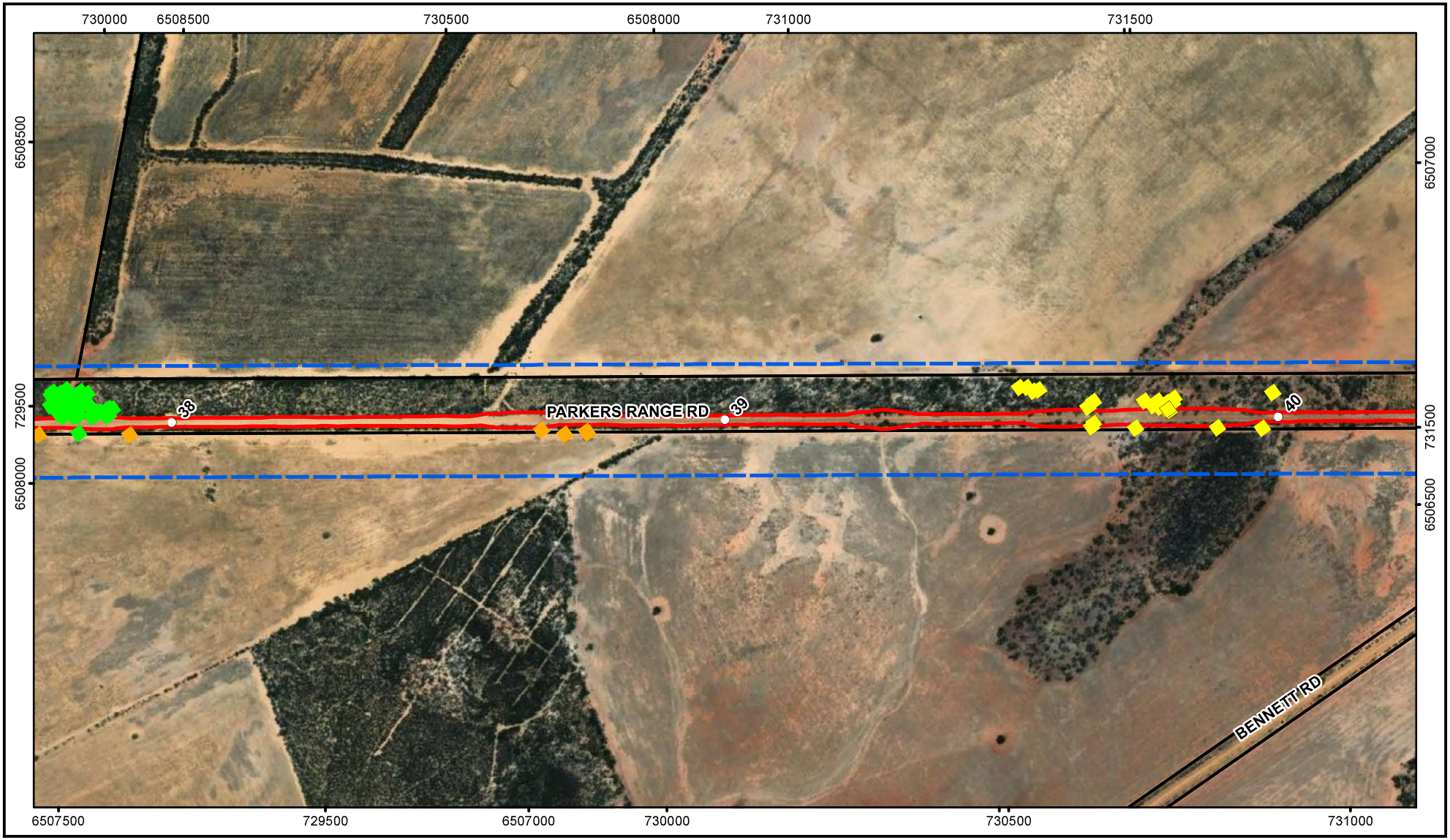
Legend
- Centreline Chainage
- *Flora SOI*
- Gne - Not Taken
- Meg - Not Taken
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 38 km to 40 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend
- Centreline Chainage
- *Flora SOI*
- Gne - Not Taken
- Hap - Not Taken
- Hap - Taken
- Meg - Not Taken
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 40 km to 42 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

Flora SOI

- Gne - Taken
- Gne - Not Taken
- Hap - Taken
- Hap - Not Taken
- Rtr - Not Taken

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 42 km to 44 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

Flora SOI

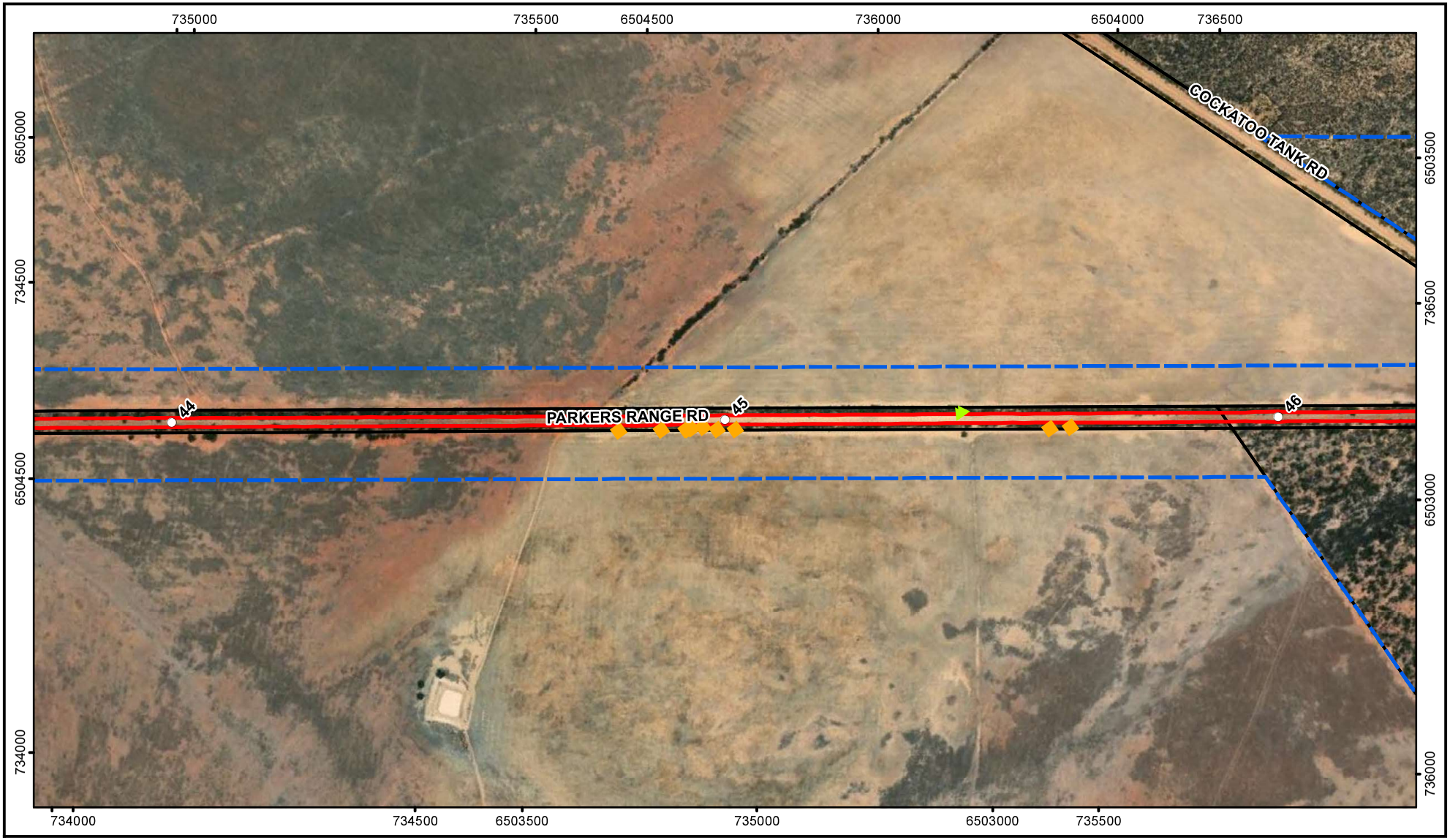
- Eex - Taken
- Eex - Not Taken
- Gne - Taken
- Gne - Not Taken
- Phd - Not Taken

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 44 km to 46 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

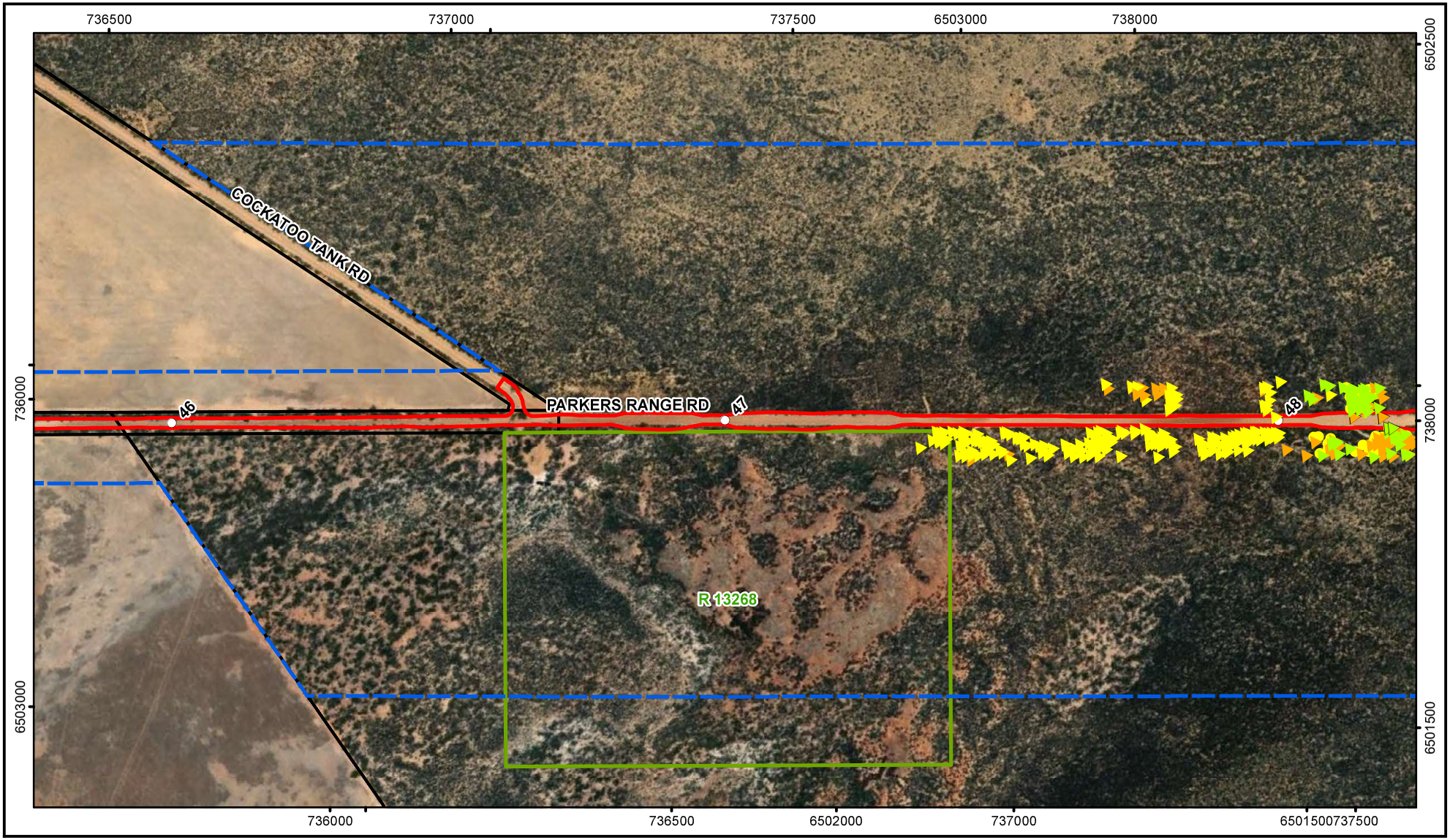
Legend
- Centreline Chainage *Flora SOI*
- Gne - Not Taken
- Vst - Not Taken
- CPS 10197/1
- Survey Limit
- Cadasta Bdry

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 46 km to 48 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Reserves
- Cadasta Bdry

Flora SOI

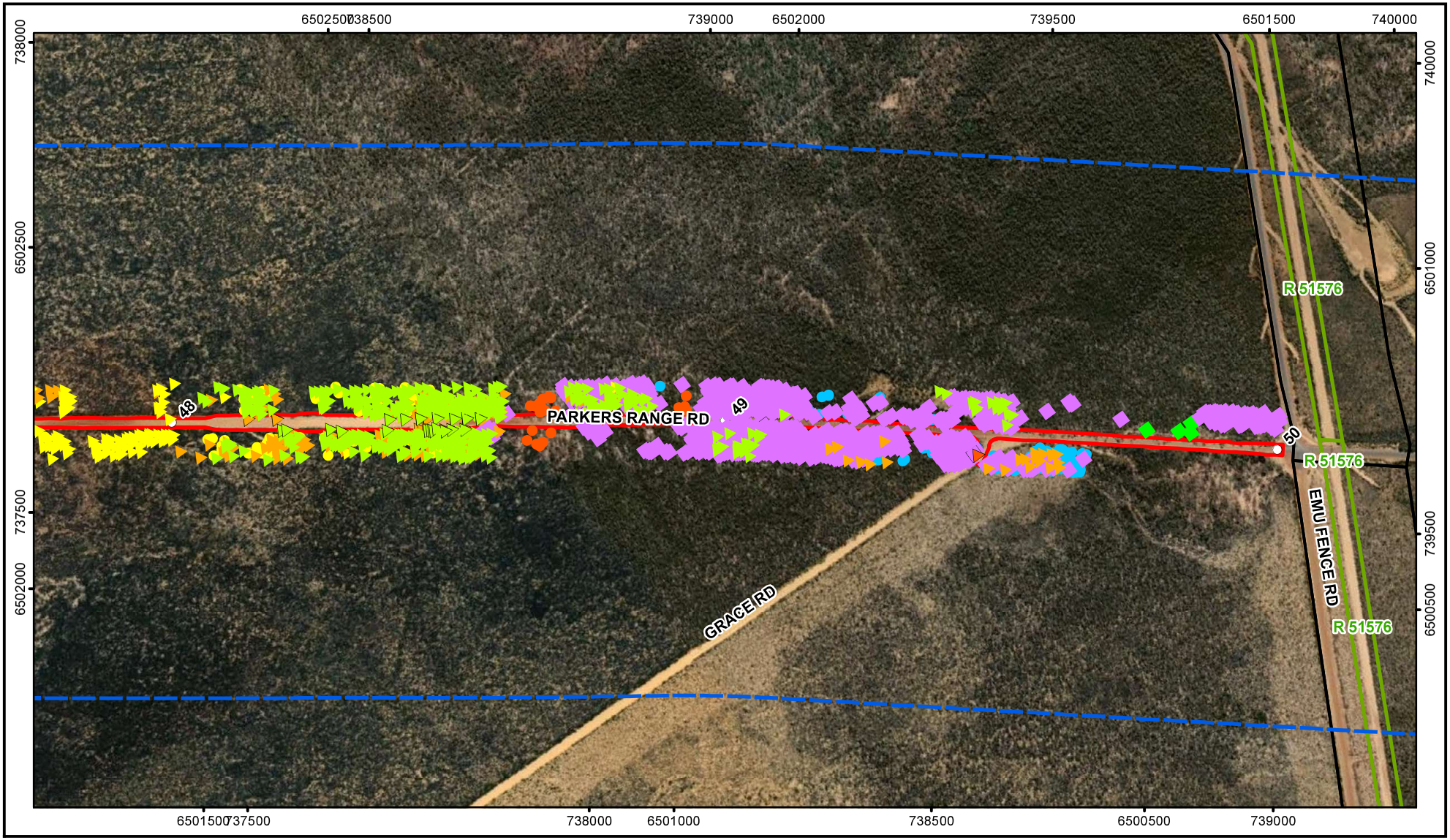
- Bgi - Not Taken
- Vmi - Not Taken
- Vmi - Taken
- Vms - Not Taken
- Vst - Taken
- Vst - Not Taken

0 0.2 km

N

Earl Grey Lithium Project
Marvel Loch-Forrestonia Rd Upgrade
CPS 10197/1 - Chn 48 km to 50 km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_05_02, Rev: A
Scale 10,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- CPS 10197/1
- Survey Limit
- Reserves
- Cadasta Bdry

Flora SOI

- Aco - Not Taken
- Bgi - Not Taken
- Bst - Not Taken
- Cp - Not Taken
- Cpr - Taken
- Meg - Not Taken
- Rtr - Not Taken
- Rtr - Taken
- Vgr - Not Taken
- Vgr - Taken
- Vmi - Not Taken
- Vmi - Taken
- Vms - Not Taken
- Vst - Not Taken
- Vst - Taken

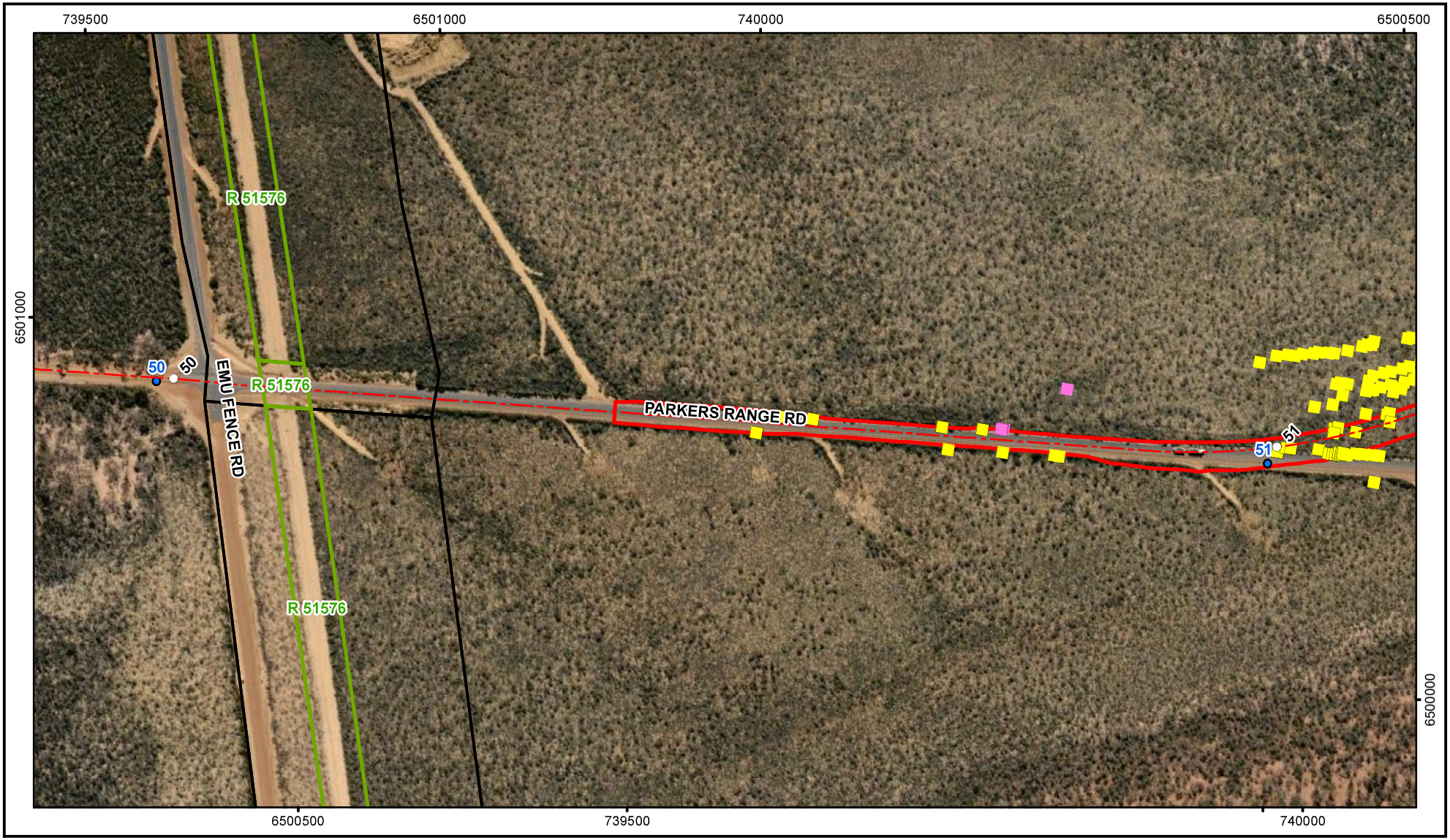
0 0.2 km

N

Central Section CPS10265

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 50km to Chn 51km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Species of Interest

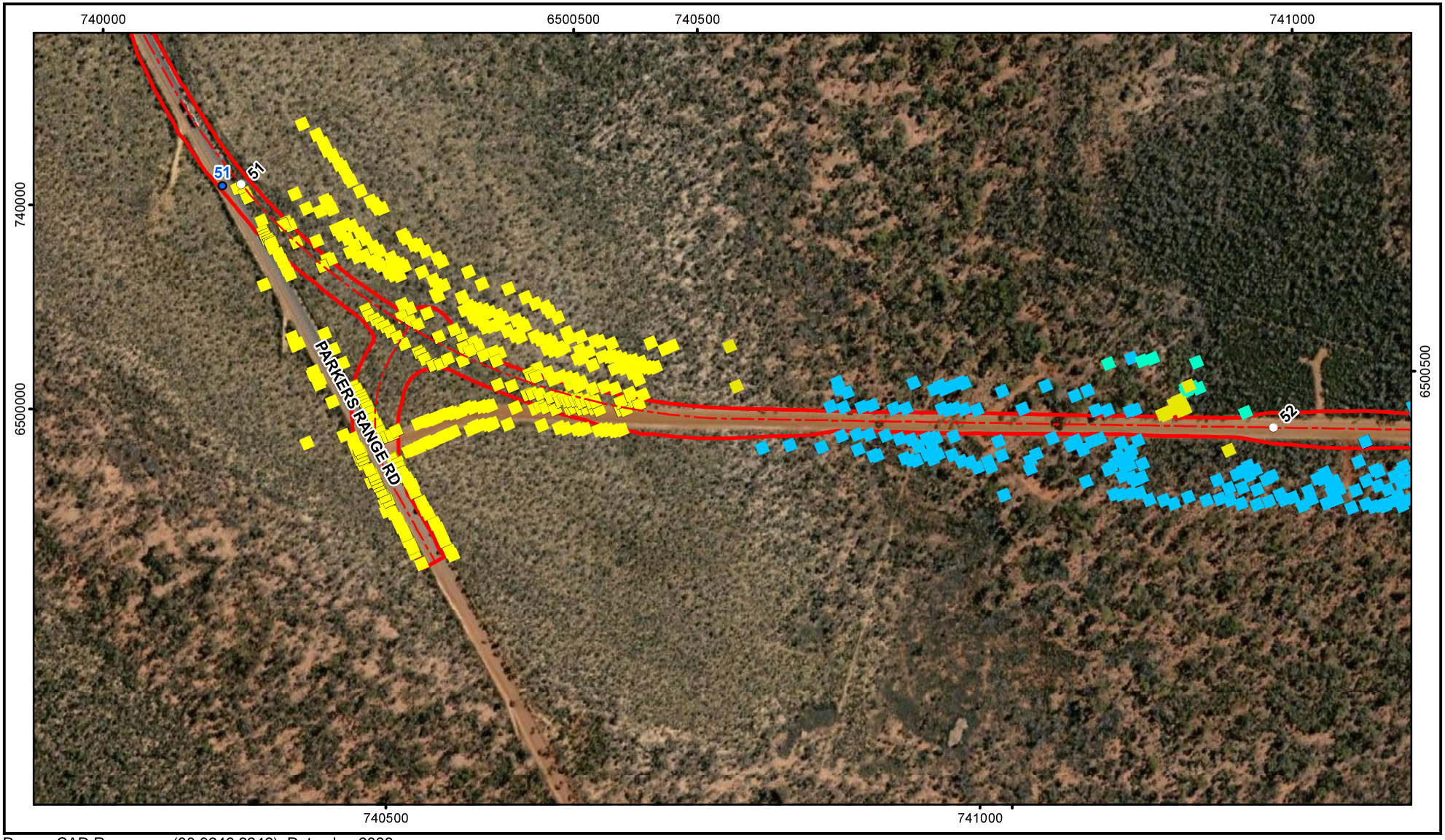
- Dgf, Not Taken
- Dgf, Taken
- Lsp, Not Taken
- Lsp, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 51km to Chn 52km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadasta Bdry

Species of Interest

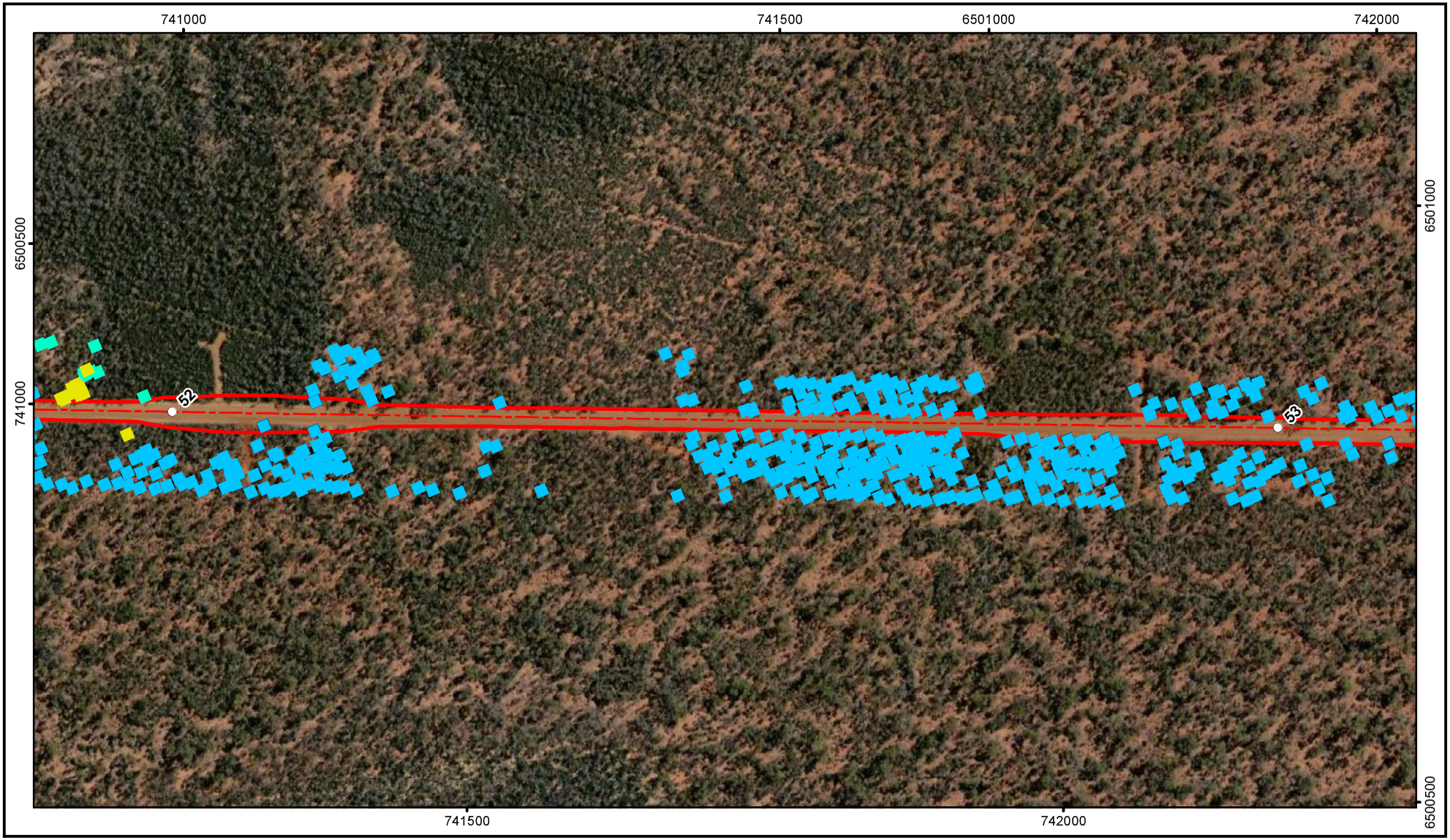
- Dgf, Not Taken
- Dgf, Taken
- Gco, Not Taken
- Gco, Taken
- Pab, Not Taken
- Prr, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 52km to Chn 53km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadasta Bdry

Species of Interest

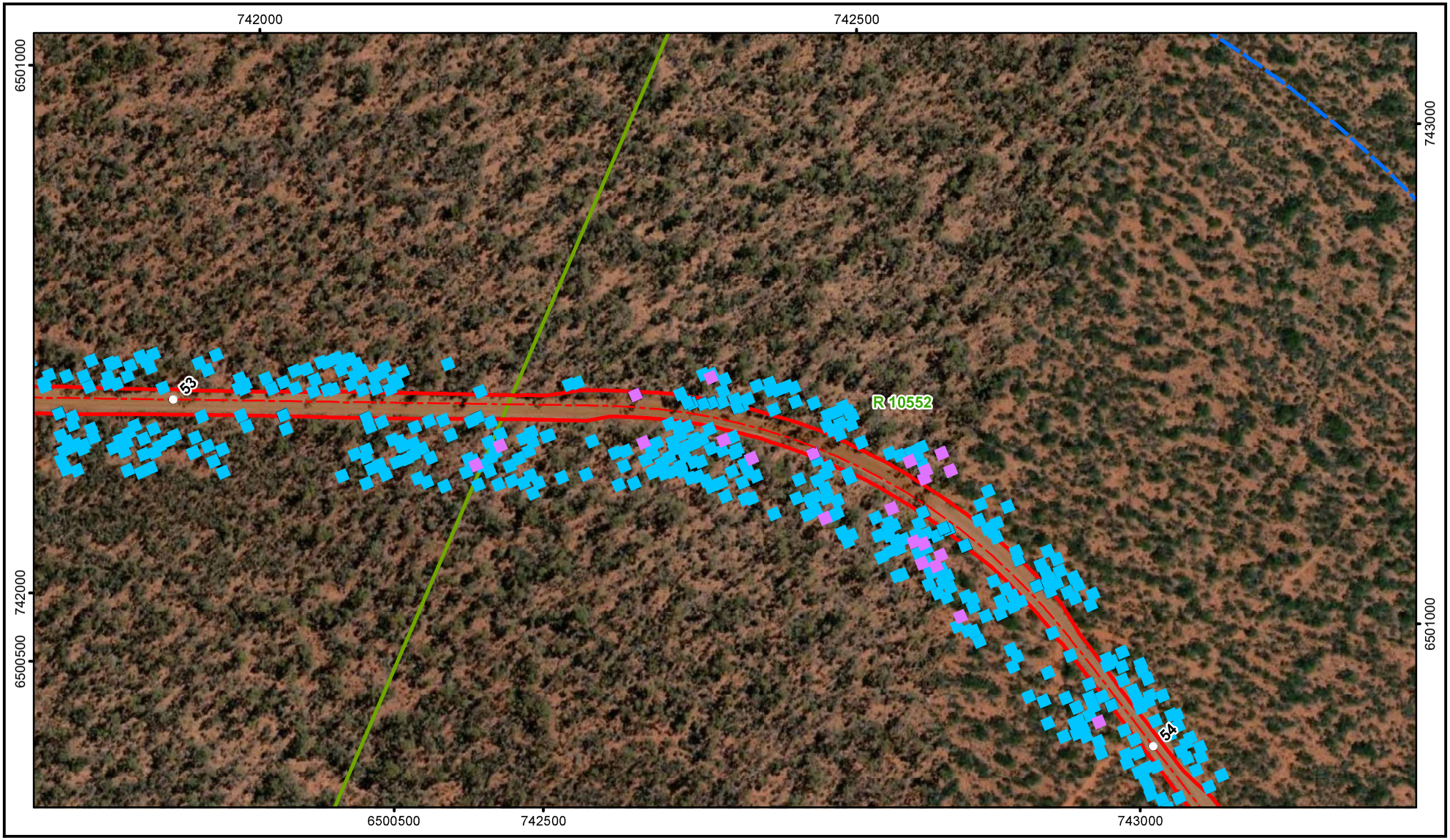
- Gco, Not Taken
- Gco, Taken
- Pab, Not Taken
- Prr, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 53km to Chn 54km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Species of Interest

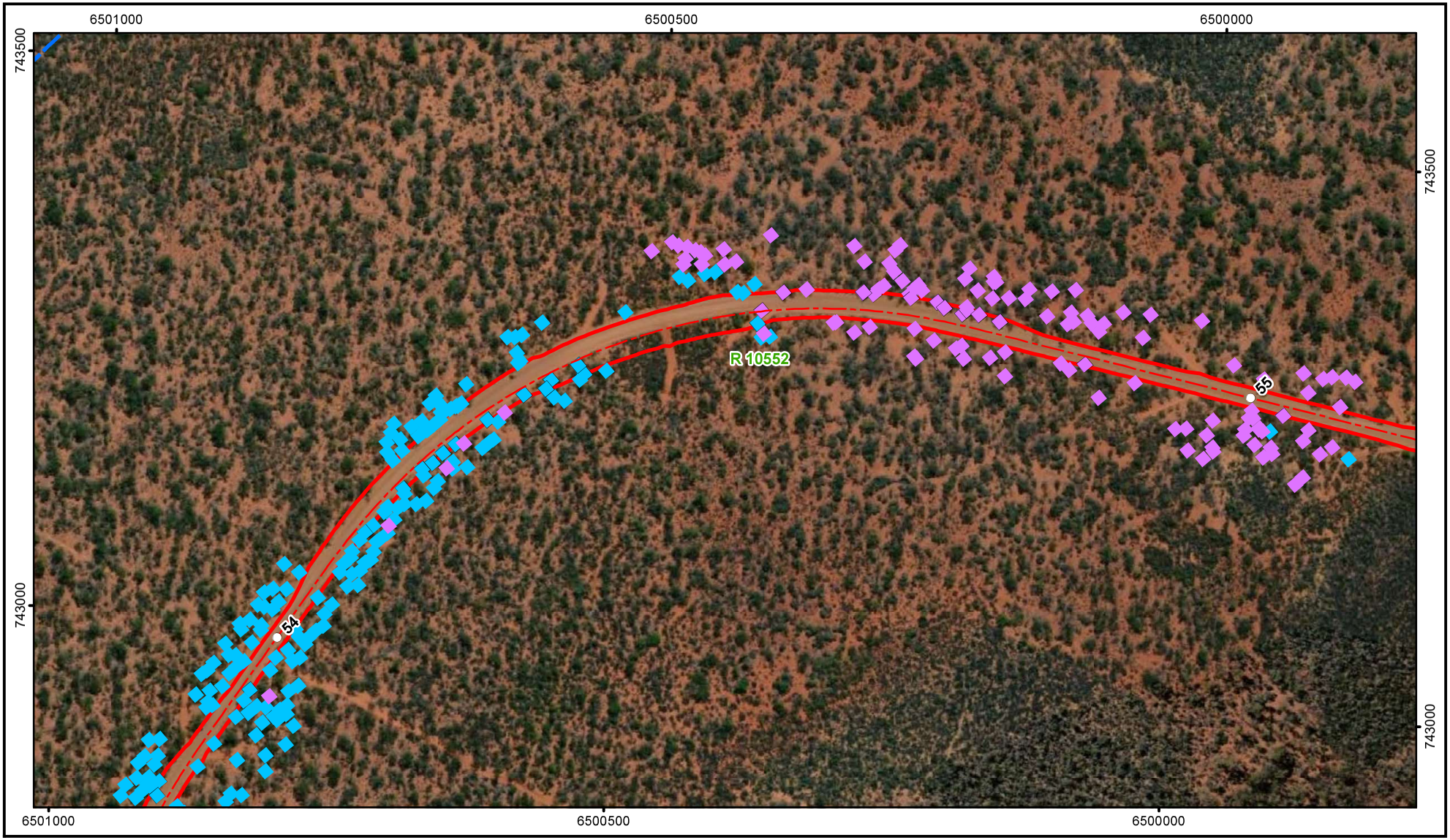
- Gco, Not Taken
- Gco, Taken
- Ghm, Not Taken
- Ghm, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 54km to Chn 55km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Species of Interest

- Gco, Not Taken
- Gco, Taken
- Ghm, Not Taken
- Ghm, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 55km to Chn 56km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

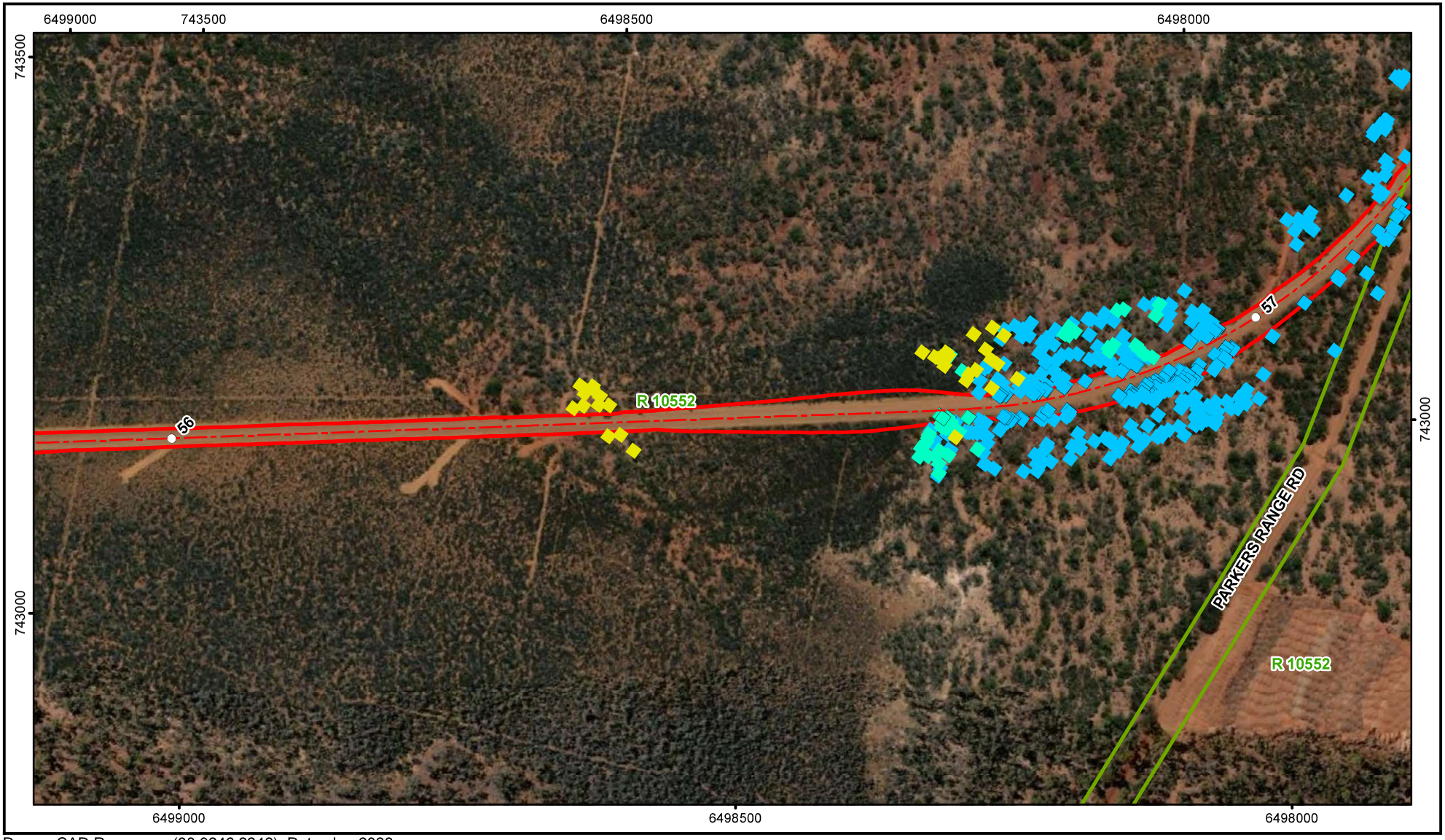
- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry
- *Species of Interest*
- Gco, Not Taken
- Ghm, Not Taken
- Ghm, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 56km to Chn 57km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Species of Interest

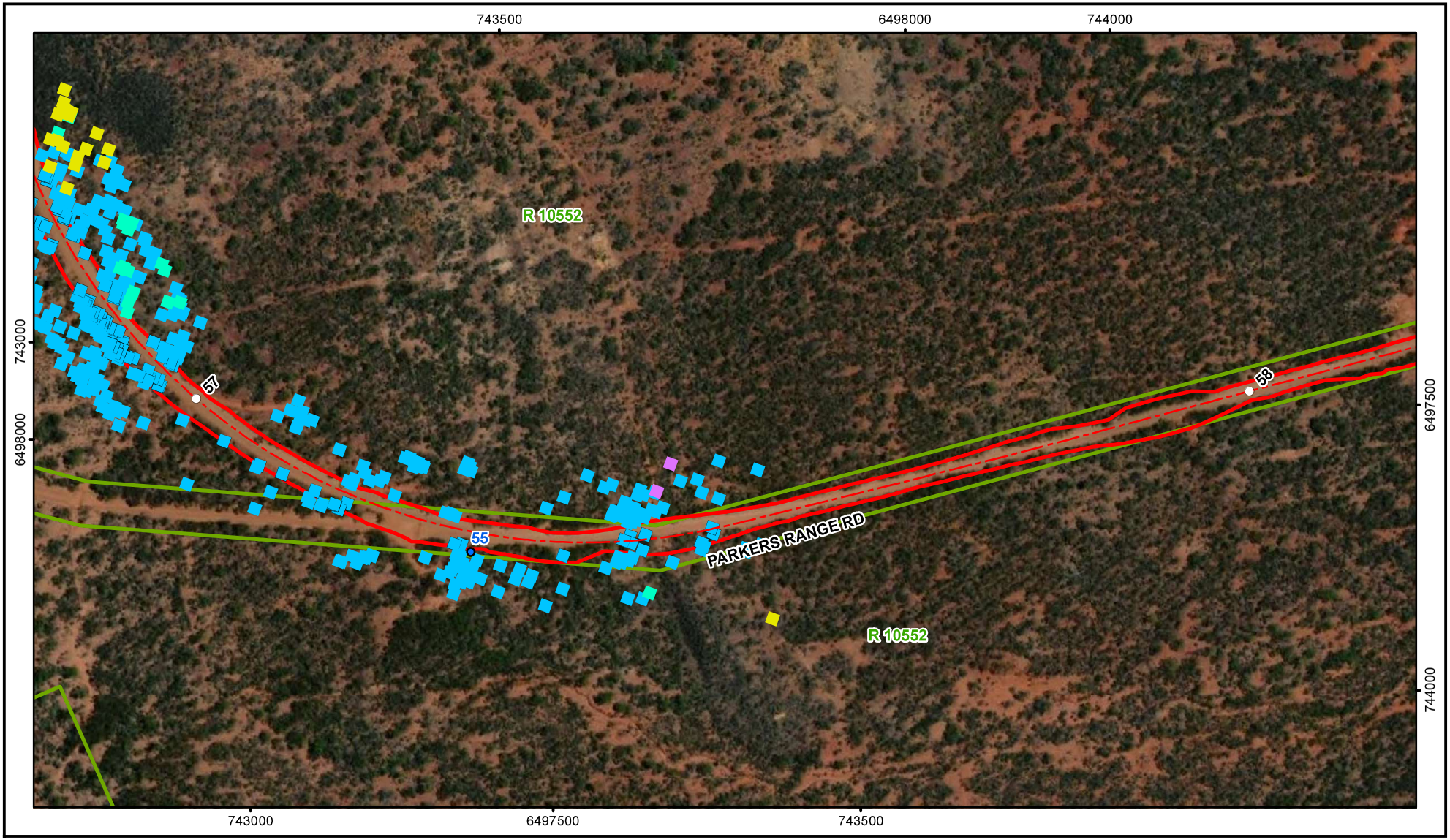
- Gco, Not Taken
- Gco, Taken
- Pab, Not Taken
- Pab, Taken
- Prr, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 57km to Chn 58km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Species of Interest

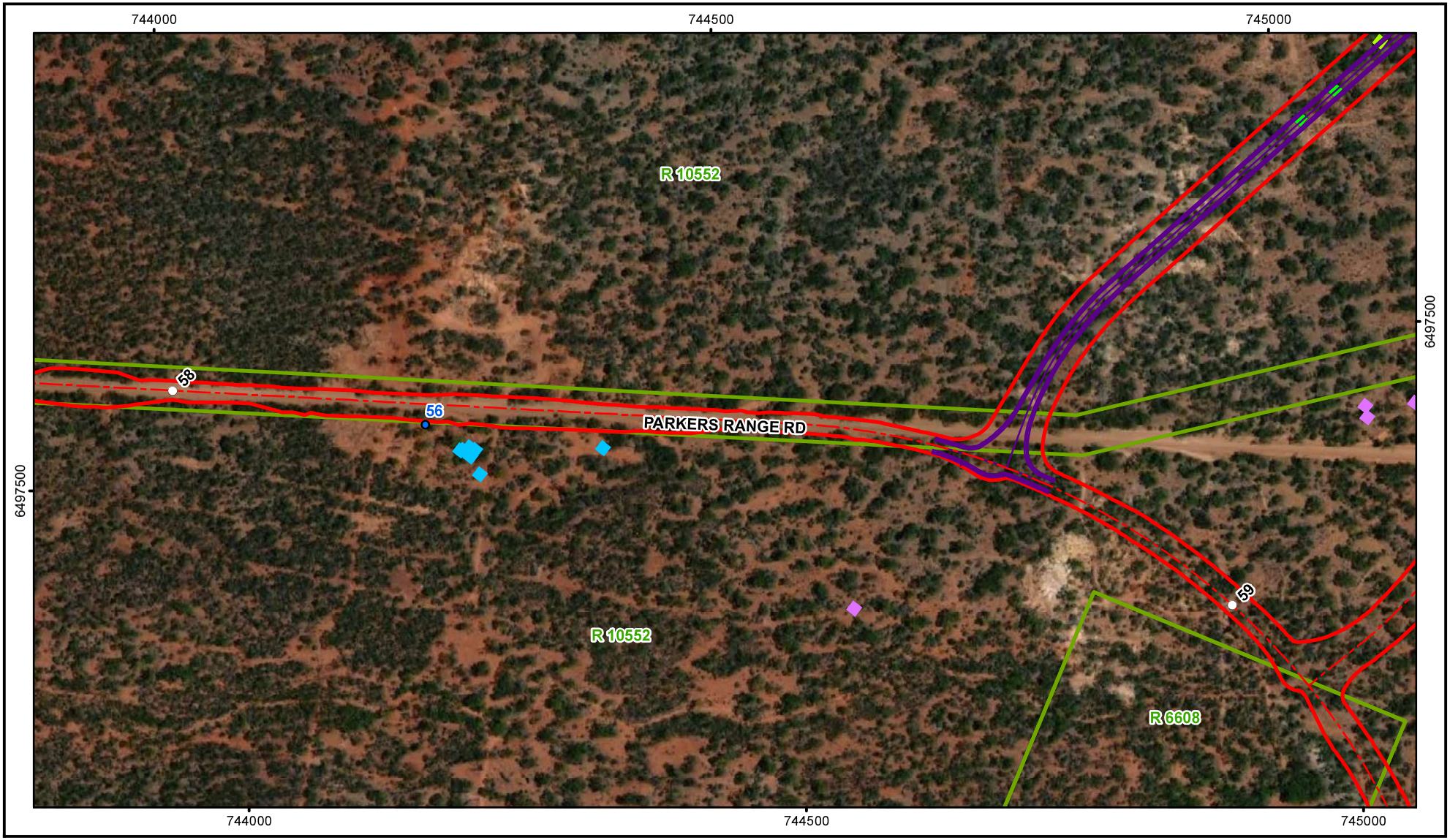
- Gco, Not Taken
- Gco, Taken
- Ghm, Not Taken
- Pab, Not Taken
- Prr, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 58km to Chn 59km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- MLF_Link_Rd_20230614
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Species of Interest

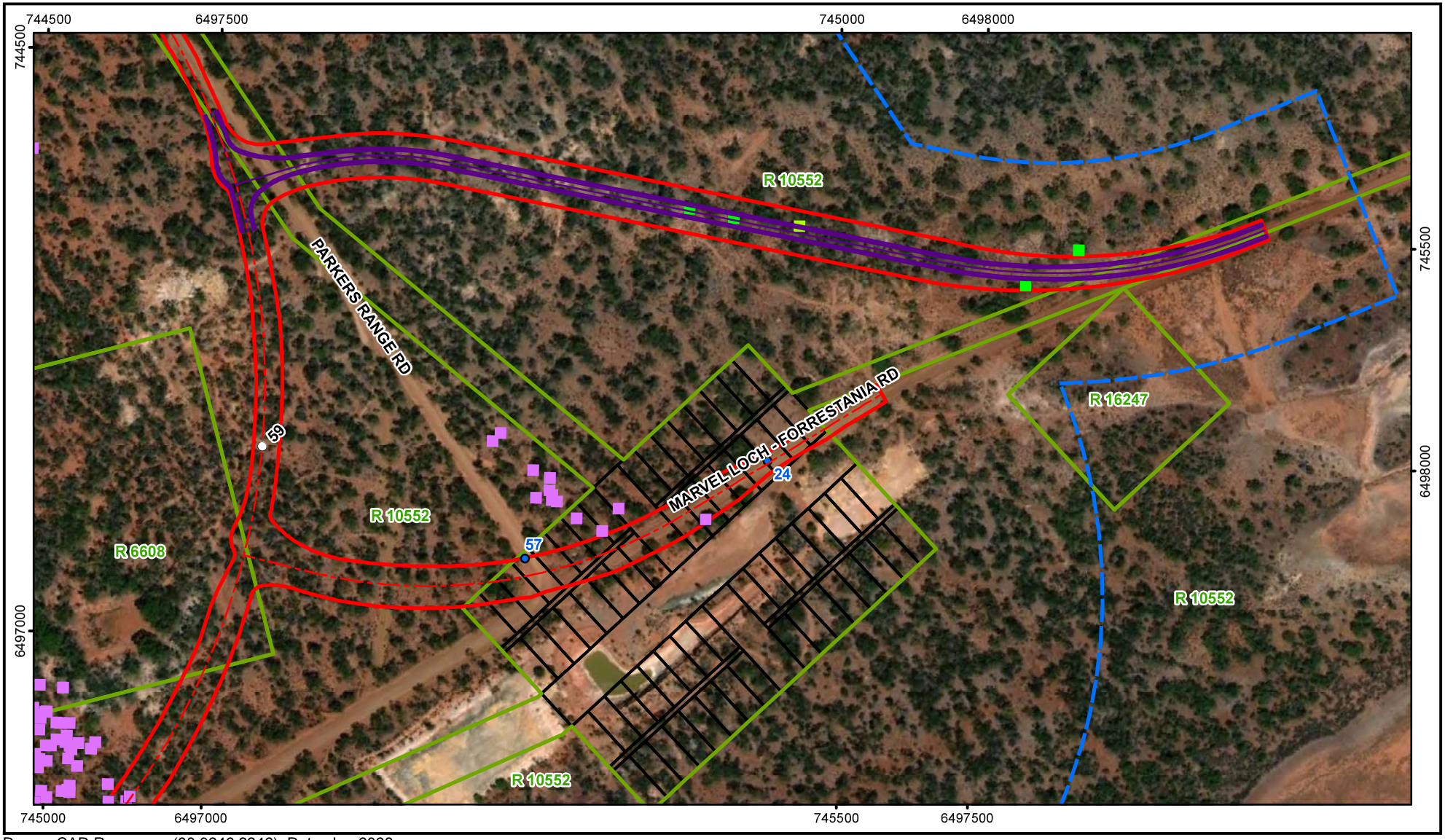
- Esg, Taken
- Gco, Not Taken
- Ghm, Not Taken
- Prb, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Marvel Loch - Forrestonia Road Connection - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- MLF_Link_Rd_20230614
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

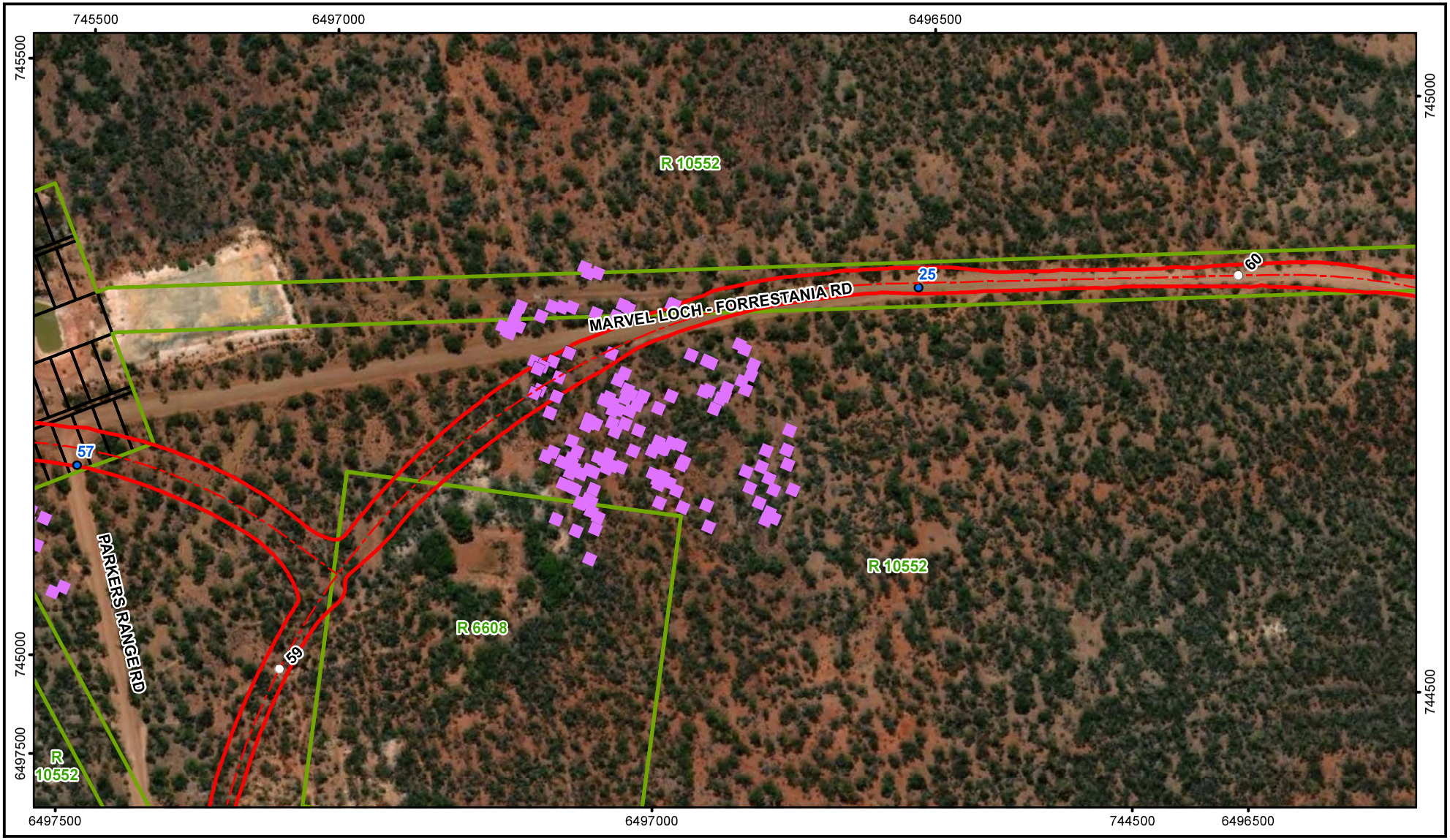
Species of Interest

- Esg, Not Taken
- Esg, Taken
- Ghm, Not Taken
- Ghm, Taken
- Prb, Taken

0 100 m

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 59km to Chn 60km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

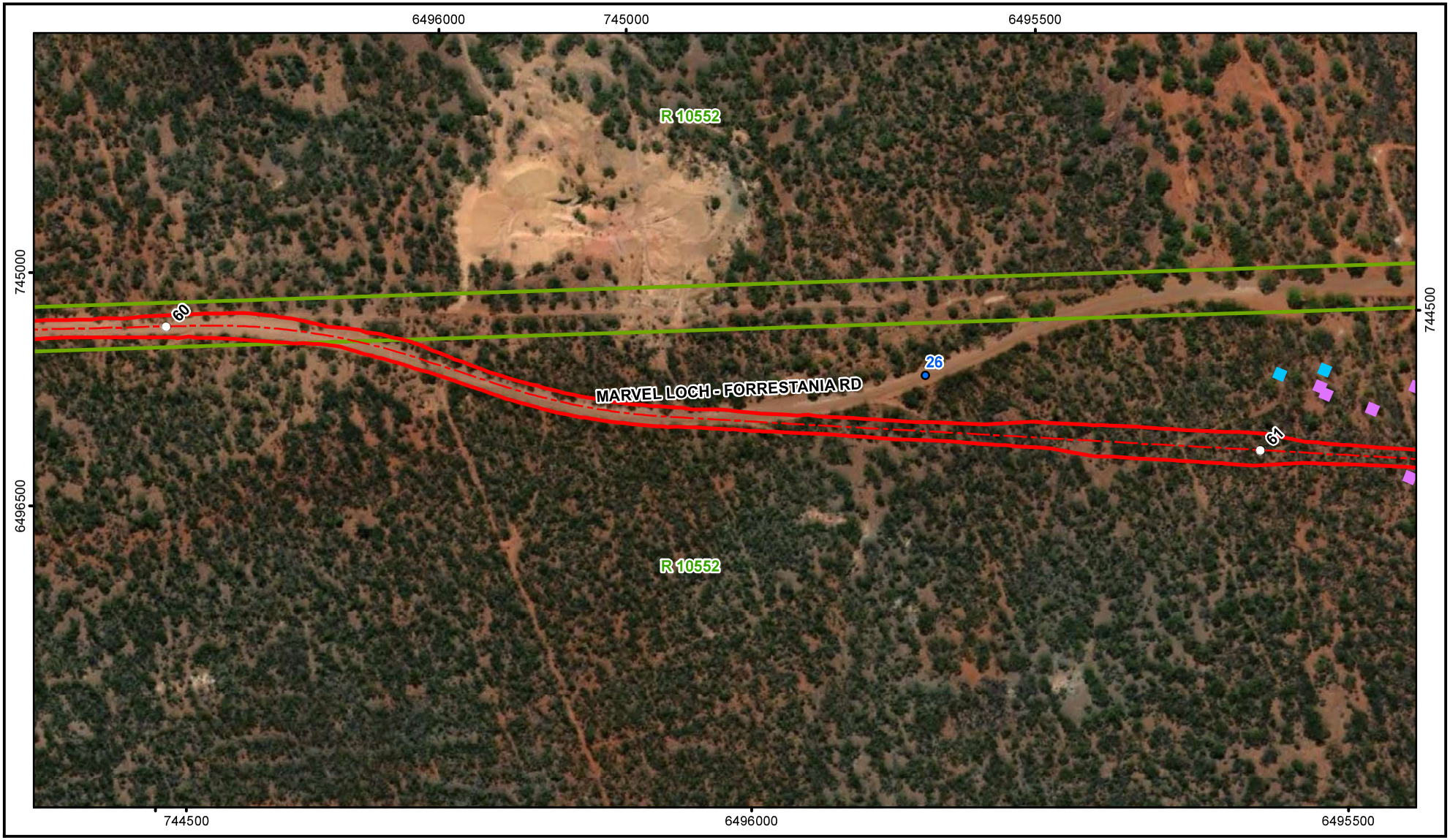
- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry
- *Species of Interest*
- Ghm, Taken
- Ghm, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 60km to Chn 61km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Species of Interest

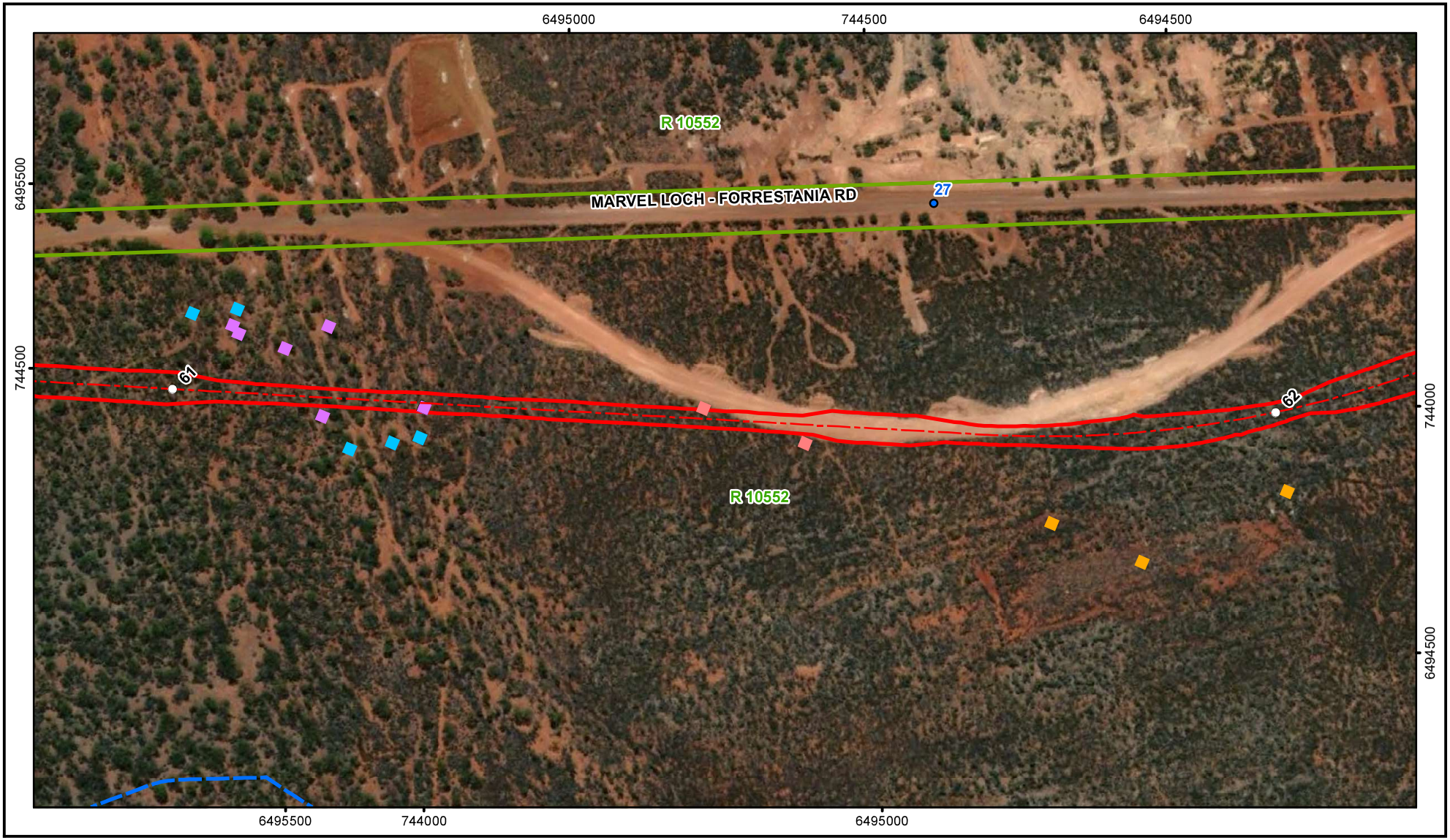
- Ghm, Not Taken
- Gco, Not Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 61km to Chn 62km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry

Species of Interest

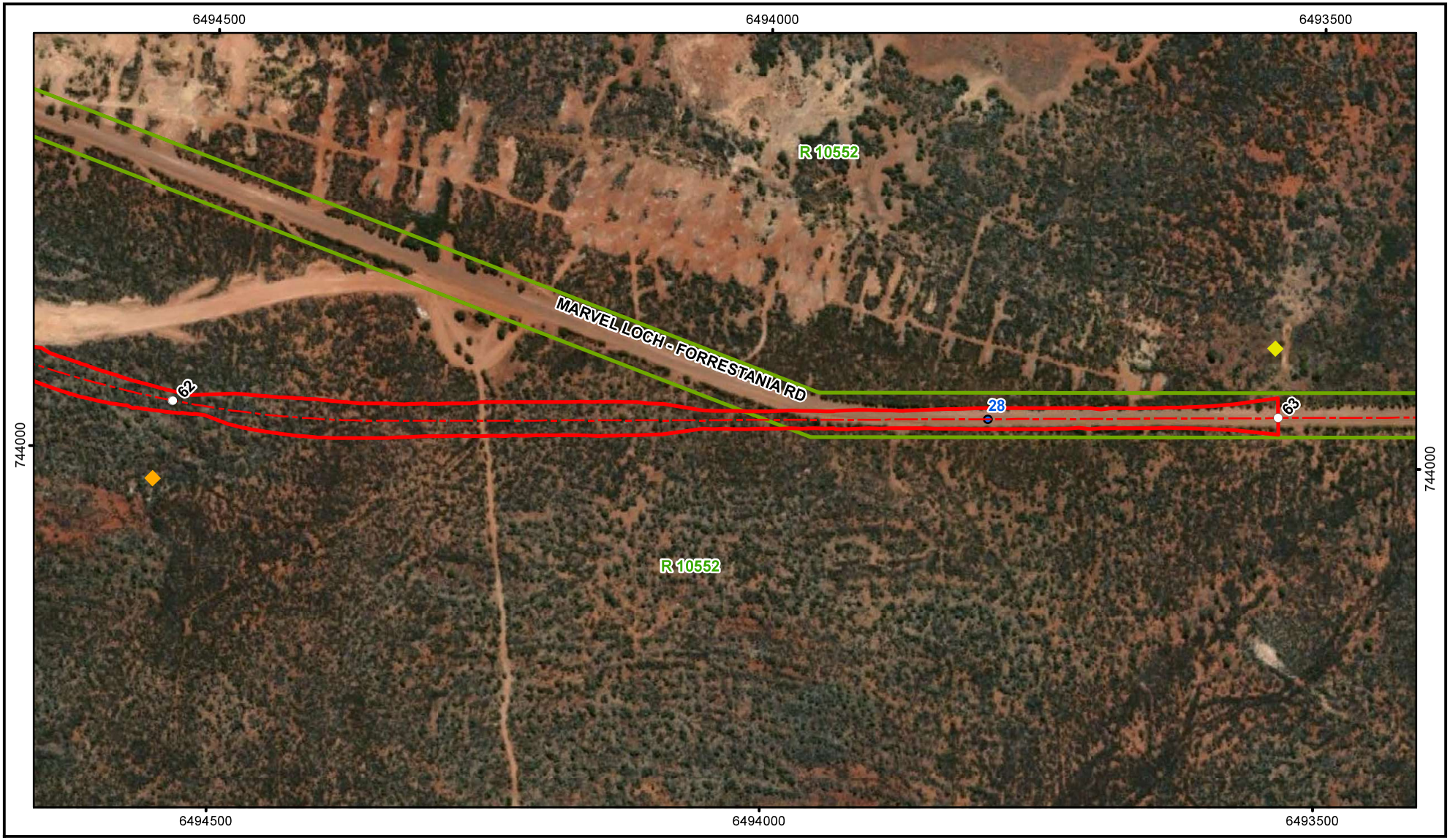
- Aml, Not Taken
- Anr, Not Taken
- Gco, Not Taken
- Ghm, Not Taken
- Ghm, Taken

0 100 m

N

Earl Grey Lithium Project
Parkers Range Road - Marvel Loch-Forrestonia Rd Upgrade
Clearing Permit for Section 3 - Chn 62km to Chn 63km - Flora - Species of Interest

DRAFT



Drawn: CAD Resources (08 9246 3242), Date: Jun 2023,
CAD Ref: a2765_MR_MTH_38_07_02, Rev: A
Scale 5,000, A4, Projection MGA94 zone 50
Source: Roads_MRWA, Cadasta: Landgate, CPS: DWER
For detailed legend refer to report

Legend

- Centreline Chainage
- SLK Marker
- Clearing Application Section3
- Survey Limit
- Cadastral Reserves
- Cadasta Bdry
- *Species of Interest*
- Prr, Not Taken
- Anr, Not Taken

0 100 m

N

Southern Section CPS10049

Yet to be produced



Western Botanical

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